Baskar, P.
10/607631

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L18 34 SEA FILE=HCAPLUS ABB=ON PLU=ON (MYCOPLASM? OR M)(W)HYOPNEUMON? AND (MUTAT? OR MUTANT? OR MUTAGEN? OR POLYMORPH? OR POLY MORPH?)
L19 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND IMMUNOGEN?

L18 34 SEA FILE=HCAPLUS ABB=ON PLU=ON (MYCOPLASM? OR M)(W)HYOPNEUMON? AND (MUTAT? OR MUTANT? OR MUTAGEN? OR POLYMORPH? OR POLY MORPH?)
L20 20 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND (SWINE OR PORCINE OR PIG OR HOG OR PIGLET)
L21 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 AND VECTOR

L18 34 SEA FILE=HCAPLUS ABB=ON PLU=ON (MYCOPLASM? OR M)(W)HYOPNEUMON? AND (MUTAT? OR MUTANT? OR MUTAGEN? OR POLYMORPH? OR POLY MORPH?)
L22 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND ADMIN?

L23 13 L19 OR L21 OR L22

L23 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 09 Sep 2004
ACCESSION NUMBER: 2004:734567 HCAPLUS
DOCUMENT NUMBER: 141:362268
TITLE: **Mycoplasma hyopneumoniae** p65 surface lipoprotein is a lipolytic enzyme with a preference for shorter-chain fatty acids
AUTHOR(S): Schmidt, Jono A.; Browning, Glenn F.; Markham, Philip F.
CORPORATE SOURCE: Department of Veterinary Science, Veterinary Preclinical Centre, The University of Melbourne, Parkville, Australia
SOURCE: Journal of Bacteriology (2004), 186(17), 5790-5798

CODEN: JOBAAY; ISSN: 0021-9193
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Mycoplasma hyopneumoniae** is the most significant bacterial pathogen of the respiratory tract of swine. P65 is an immunodominant surface lipoprotein of **M. hyopneumoniae** that is specifically recognized during disease. Anal. of the translated amino acid sequence of the gene encoding p65 revealed similarity to the GDSL family of lipolytic enzymes. To examine the lipolytic activity of p65, the gene was cloned and expressed in Escherichia coli after truncation of the prokaryotic lipoprotein signal sequence and **mutagenesis** of the mycoplasma TGA tryptophan codons. After treatment with thrombin, the recombinant glutathione S-transferase (GST)-p65 protein yielded a 66-kDa fusion protein cleavage product corresponding in size to the mature p65 protein. The esterase activity of recombinant GST-p65 was indicated by the formation of a cleared zone on tributyrin agar plates and the hydrolysis of p-nitrophenyl esters of caproate (pNPC) and p-nitrophenyl esters of palmitate (pNPP). Lipase activity was indicated by the hydrolysis of the artificial triglyceride 1,2-O-dilauryl-rac-glycero-3-glutaric acid resorufin ester. Using pNPC and pNPP as substrates, recombinant GST-p65 had optimal activity between pHs 9.2 and 10.2 and at a temperature higher than 39°C. Calcium ions did not increase the activity of recombinant GST-p65. Rabbit anti-p65 antibodies inhibited the activity of recombinant GST-p65 and also inhibited the growth of **M. hyopneumoniae** in vitro. Examination of the kinetic parameters of recombinant GST-p65 for the hydrolysis of pNPC and pNPP indicated a preference for the shorter fatty acid chain of pNPC. The physiol. and/or pathogenic role of mycoplasma lipolytic enzymes has not been determined, but they are likely to play an important role in mycoplasmas' nutritional requirements for long-chain fatty acids and may reduce the function of lung surfactants in mycoplasma-induced respiratory diseases. This is the first report of the lipolytic activity of a lipid-modified surface **immunogen** of a mycoplasma.
REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 18 Mar 2004
ACCESSION NUMBER: 2004:215947 HCAPLUS
DOCUMENT NUMBER: 140:422161
TITLE: Erysipelothrix rhusiopathiae YS-1: a live vaccine **vector** for mucosal delivery of recombinant proteins in **pigs**
AUTHOR(S): Shimoji, Yoshihiro
CORPORATE SOURCE: National Institute of Animal Health, Tsukuba, 305-0856, Japan
SOURCE: Recent Research Developments in Microbiology (2002), 6(Pt. 2), 387-393
CODEN: RDMIFR
PUBLISHER: Research Signpost
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Erysipelothrix rhusiopathiae YS-1 is a stable, acapsular **mutant** that was rationally developed by a novel mechanism using the self-conjugative transposon Tn916. With a new expression

system for surface display of heterologous proteins on E. rhusiopathiae, the C-terminal portion of the P97 adhesin of **Mycoplasma hyopneumoniae**, the causative agent of enzootic pneumonia in **pigs**, was successfully expressed on the YS-1 strain. Intranasal vaccination of **piglets** with the recombinant YS-1 strain induced complete protection against E. rhusiopathiae infection and greatly reduced the severity of lung lesions after challenge of a virulent **M. hyopneumoniae**.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 11 Jan 2004
ACCESSION NUMBER: 2004:20823 HCAPLUS
DOCUMENT NUMBER: 140:110097
TITLE: **Immunogenic** polypeptides of **Mycoplasma hyopneumoniae** and encoding nucleic acids for diagnosis and therapy
INVENTOR(S): Minion, Chris F.; Mahairas, Gregory G.; Djordjevic, Steven P.
PATENT ASSIGNEE(S): Iowa State University Research Foundation, Inc., USA; NSW Agriculture; Department of Agriculture For and On Behalf of The State of New South Wales
SOURCE: PCT Int. Appl., 81 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004003161	A2	20040108	WO 2003-US20460	20030627
WO 2004003161	A3	20050428		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004091901	A1	20040513	US 2003-607631	20030627
EP 1546357	A2	20050629	EP 2003-742308	20030627
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

PRIORITY APPLN. INFO.: US 2002-392632P P 20020628
WO 2003-US20460 W 20030627

AB **Mycoplasma hyopneumoniae** polypeptides and nucleic acids, as well as nucleic acid expression **vectors** and host cells containing nucleic acid **vectors** are provided. In addition, compns. containing **M. hyopneumoniae** polypeptides and

nucleic acids are provided for use in methods of treating **swine** to prevent enzootic pneumonia. Furthermore, the invention provides diagnostic tests for the detecting of **M. hyopneumoniae** infection in **swine** herds.

L23 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 06 Jan 2004
ACCESSION NUMBER: 2004:7758 HCAPLUS
DOCUMENT NUMBER: 140:282587
TITLE: Effects of Gestational and Lactational Exposure to Organochlorine Compounds on Cellular, Humoral, and Innate Immunity in Swine
AUTHOR(S): Bilrha, Houda; Roy, Raynald; Wagner, Eric; Belles-Isles, Marthe; Bailey, Janice L.; Ayotte, Pierre
CORPORATE SOURCE: Unite de Recherche en Rhumatologie et Immunologie, Centre de Recherche du CHUL-CHUQ, Quebec, QC, G1V 4G2, Can.
SOURCE: Toxicological Sciences (2004), 77(1), 41-50
CODEN: TOSCF2; ISSN: 1096-6080
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Few studies have characterized the immunotoxic potential of complex mixts. of organochlorines (OCs) that bear environmental relevance. We monitored immune parameters in male piglets exposed in utero and through lactation to an OC mixture which was designed to approx. that found in the traditional diet of Arctic aboriginal populations. Prepubertal sows were **administered** orally either corn oil (control group) or the OC mixture in increasing doses (low, medium, and high). The sows were inseminated with the semen from an untreated boar and OC treatment was continued throughout gestation and lactation (21 days). Blood was collected from the sows at delivery and monthly from piglets until 8 mo of age for the determination of plasma OC concns. and parameters of innate, cellular, and humoral immunity. Treatment with the OC mixture had no dose-dependent effect on the proportion of CD4+ and CD8+ T-cell subsets, and did not modulate the functional activity of the complement component C2. The proportion of CD4+CD8+ cells, CD8+DR+ cells, and the mitogenic lymphoproliferative response increased in OC-treated, 4-mo-old piglets. At 6 mo, the lymphoproliferative response to mitogen and the proportion CD4+CD8+ cells were still elevated in the OC-treated piglets, but the proportion of CD8+DR+ cells was decreased as compared to the controls. Animals in the high-dose group also exhibited a slight increase in **polymorphonuclear** leukocyte phagocytic activity at 8 mo of age. Furthermore, the high dose decreased the antibody response to **Mycoplasma hyopneumoniae**. Our results indicate that developmental exposure to an environmentally relevant OC mixture alters the immune function in swine.
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 16 Jun 2003
ACCESSION NUMBER: 2003:457886 HCAPLUS
DOCUMENT NUMBER: 139:99617
TITLE: Monoclonal antibodies to Escherichia

coli-expressed P46 and P65 membranous proteins for specific immunodetection of **Mycoplasma hyopneumoniae** in lungs of infected **pigs**

AUTHOR(S): Bouh, K. Cheikh Saad; Shareck, F.; Dea, S.
CORPORATE SOURCE: INRS-Institut Armand-Frappier, Universite du Quebec, Laval, QC, H7V 1B, Can.

SOURCE: Clinical and Diagnostic Laboratory Immunology (2003), 10(3), 459-468
CODEN: CDIMEN; ISSN: 1071-412X
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The P46 and P65 proteins of **Mycoplasma hyopneumoniae** are two membranous proteins carrying species-specific antigenic determinants. Based on the genomic sequence of the reference strain ATCC 25934, primers were designed for PCR amplification of the genes encoding entire P46 (1,260 bp) and P65 (1,803 bp) and N-terminally truncated P65c (1,200 bp). These primers were shown to be specific to **M. hyopneumoniae** since no DNA amplicons could be obtained with other mycoplasma species that commonly colonize the **porcine** respiratory tract. Both amplified genes were then cloned into the pGEX-4T-1 **vector** to be expressed in Escherichia coli cells as recombinant fusion proteins with glutathione S-transferase (GST). Prior to generation of expression constructs, TGA nonsense codons, exceptionally used for tryptophan residues by **M. hyopneumoniae**, had been converted to TGG codons by PCR-directed **mutagenesis**. Following induction by IPTG (isopropyl-β-D-thiogalactopyranoside), both GST-P46 and GST-P65c recombinant fusion proteins were recovered by disrupting transformed cells by sonication, purified by affinity chromatog., and then cut with thrombin to release the P46 and P65c moieties. The enriched E. coli-expressed P46 and P65c proteins were used to immunize female BALB/c mice for the generation of anti-P46 and anti-P65c monoclonal antibodies (MAbs). The polypeptide specificities of MAbs obtained was confirmed by Western blotting with cell lysates prepared from the homologous strain. Cross-reactivity study of the anti-P46 and anti-P65c MAbs towards two other **M. hyopneumoniae** reference strains (ATCC 25095 and J strains) and Quebec field strains that had been isolated in culture, suggested that the MAbs obtained against both membranous proteins were directed against highly conserved species-specific epitopes. No reactivity to other mycoplasma species tested was demonstrated. Clin. signs and lesions suggestive of enzootic pneumonia were reproduced in specific-pathogen-free **pigs** that had been inoculated intratracheally with a virulent Quebec field strain (IAF-DM9827) of **M. hyopneumoniae** . Both anti-P46 and anti-P65c MAbs permitted effective detection by indirect immunofluorescence and indirect immunoperoxidase assay of **M. hyopneumoniae** in, resp., frozen and formalin-fixed, paraffin-embedded lung sections from **pigs** that were killed after the 6- to 7-wk observation period.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 26 Mar 2003
ACCESSION NUMBER: 2003:235421 HCAPLUS
DOCUMENT NUMBER: 138:253707

TITLE: Fusion agents containing immunostimulating (adjuvant) and **immunogenic** domain as vaccines
INVENTOR(S): Minion, F. Chris; Menon, Sreekumar A.; Mahairas, Gregory G.
PATENT ASSIGNEE(S): Iowa State University Research Foundation, Inc., USA
SOURCE: U.S., 26 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 6537552	B1	20030325	US 2000-692064		20001019
US 2003162260	A1	20030828	US 2003-384948		20030310
PRIORITY APPLN. INFO.:			US 1999-160429P	P	19991019
			US 1999-160249P	P	19991019
			US 2000-692064	A3	20001019

AB I fusion agents such as fusion proteins that are useful for the treatment and prevention of diseases that are susceptible to the effects of cellular (Th1 type) immune responses. Also encompassed by the invention are nucleic acids encoding the fusion proteins of the invention, vectors containing the nucleic acids, and cells containing the vectors. The invention includes methods of making and using the fusion agents of the invention.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 04 Oct 2002
ACCESSION NUMBER: 2002:752377 HCAPLUS
DOCUMENT NUMBER: 137:277776
TITLE: Sequences of **Mycoplasma hyopneumoniae** antigen mhp3 and therapeutic and diagnosis uses
INVENTOR(S): King, Kendall Wayne; Madura, Rebecca Anne; Rosey, Everett Lee
PATENT ASSIGNEE(S): Pfizer Products Inc., USA
SOURCE: Eur. Pat. Appl., 38 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 1245677	A1	20021002	EP 2001-303030		20010330
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
BR 2001002541	A	20020528	BR 2001-2541		20010329
JP 2002306169	A2	20021022	JP 2001-101364		20010330
PRIORITY APPLN. INFO.:			US 2000-676249	A	20000929

EP 2001-303030 A 20010330

AB The present invention provides protein and DNA sequences of **Mycoplasma hyopneumoniae** antigen mhp3 gene. The present invention further relates to novel apoprotein antigens encoded by mhp3 gene for use in vaccines to prevent and treat diseases caused by infection with **Mycoplasma hyopneumoniae**. The invention further relates to methods, **vector** and host cells for recombinant production of such antigens. The invention also relates to diagnosis of infections in **pig** caused by **Mycoplasma hyopneumoniae**.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 10 Feb 2002
ACCESSION NUMBER: 2002:107503 HCAPLUS
DOCUMENT NUMBER: 136:156391
TITLE: Temperature-sensitive live vaccine for **Mycoplasma hyopneumoniae**
INVENTOR(S): Pijoan, Carlos
PATENT ASSIGNEE(S): Regents of the University of Minnesota, USA
SOURCE: PCT Int. Appl., 18 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002010343	A2	20020207	WO 2001-US23663	20010727
WO 2002010343	A3	20021010		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 6585981	B1	20030701	US 2000-627006	20000727
CA 2417482	AA	20020207	CA 2001-2417482	20010727
AU 2001077207	A5	20020213	AU 2001-77207	20010727
EP 1307540	A2	20030507	EP 2001-954997	20010727
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2001012792	A	20030624	BR 2001-12792	20010727
JP 2004505096	T2	20040219	JP 2002-516062	20010727
NZ 524035	A	20040924	NZ 2001-524035	20010727
NO 2003000423	A	20030312	NO 2003-423	20030127
PRIORITY APPLN. INFO.:			US 2000-627006	A1 20000727
			WO 2001-US23663	W 20010727

AB Preparation of a live temperature-sensitive vaccine against **M. hyopneumoniae** infections for a swine is described. The vaccine comprises a **mutant** of **M. hyopneumoniae** obtained by treatment with N-methyl-N-nitro-N-nitrosoguanidine in combination with a physiol. acceptable, non-toxic carrier. It is **administered** by s.c. or i.m. injection, oral ingestion, or intranasally. The vaccine further comprises an immunol. adjuvant and at least one addnl. infectious agent, i.e., a virus, a bacterium, a fungus or a parasite. The safety and efficacy of the vaccine against **M. hyopneumoniae** were confirmed in pigs. The vaccine is useful for protection against porcine respiratory disease complex.

L23 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 09 Nov 2001
ACCESSION NUMBER: 2001:816894 HCAPLUS
DOCUMENT NUMBER: 135:353765
TITLE: Recombinant **porcine** adenovirus serotype 5 (PAdV-5) and method of preparing vaccines against intestinal or respiratory infection in **pigs**
INVENTOR(S): Nagy, Eva; Tuboly, Tamas; Nagy, Miklos
PATENT ASSIGNEE(S): University of Guelph, Can.
SOURCE: PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001083737	A2	20011108	WO 2001-CA598	20010503
WO 2001083737	A3	20020822		
W: CA, MX, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
CA 2413265	AA	20011108	CA 2001-2413265	20010503
EP 1311698	A2	20030521	EP 2001-929140	20010503
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
PRIORITY APPLN. INFO.:			US 2000-201666P	P 20000503
			WO 2001-CA598	W 20010503

AB The entire nucleotide sequence of **porcine** adenovirus serotype 5 (PAdV-5) is described, as well as PAdV-5 use as delivery **vector** or vaccine. The present invention includes modified forms of PAdV-5, including PAdV-5 wherein the E3 region has been deleted. Methods of inserting heterologous nucleotide sequences, such as the S gene of transmissible gastroenteritis virus (TGEV), into the E3 region of the virus are also described. Vaccines and methods of preparing vaccines with the recombinant PAdV-5 are described as well as applications of the recombinant virus and vaccines to prevent or treat intestinal or respiratory infection in **pigs**.

L23 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 13 Apr 2001

ACCESSION NUMBER: 2001:261139 HCAPLUS
DOCUMENT NUMBER: 134:294510
TITLE: Sequences of **Mycoplasma hyopneumoniae** antigen mhp3 and therapeutic uses thereof
INVENTOR(S): King, Kendall Wayne; Madura, Rebecca Anne; Rosey, Everett Lee
PATENT ASSIGNEE(S): Pfizer Products Inc., USA
SOURCE: Eur. Pat. Appl., 38 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1090995	A2	20010411	EP 2000-308421	20000926
EP 1090995	A3	20010418		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2319213	AA	20010329	CA 2000-2319213	20000927
BR 2000004488	A	20011113	BR 2000-4488	20000927
NZ 507205	A	20020301	NZ 2000-507205	20000928
CN 1296953	A	20010530	CN 2000-129083	20000929
JP 2001149085	A2	20010605	JP 2000-300778	20000929
CA 2340455	AA	20020928	CA 2001-2340455	20010328
ZA 200102540	A	20030410	ZA 2001-2540	20020328
PRIORITY APPLN. INFO.:			US 1999-156602P P	19990929

AB The present invention provides protein and DNA sequences of **Mycoplasma hyopneumoniae** antigen mhp3 gene. The present invention further relates to novel apoprotein antigens encoded by mhp3 gene for use in vaccines to prevent and treat diseases caused by infection with **Mycoplasma hyopneumoniae**. The invention further relates to method recombinant production of such antigens.

L23 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 02 Feb 1999
ACCESSION NUMBER: 1999:70376 HCAPLUS
DOCUMENT NUMBER: 130:144164
TITLE: Detoxified **immunogenic** β-toxin derivative as a Clostridium perfringens vaccine
INVENTOR(S): Sergers, Ruud Philip Antoon Maria; Waterfield, Nicolas Robin; Frandsen, Peer Lyng; Wells, Jeremy Mark
PATENT ASSIGNEE(S): Akzo Nobel N.V., Neth.
SOURCE: Eur. Pat. Appl., 70 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 892054	A1	19990120	EP 1998-202032	19980617
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				

PT, IE, SI, LT, LV, FI, RO					
CA 2235445	AA	19981220	CA 1998-2235445		19980618
AU 9873087	A1	19981224	AU 1998-73087		19980619
AU 743498	B2	20020124			
ZA 9805393	A	19990217	ZA 1998-5393		19980619
JP 11103872	A2	19990420	JP 1998-210185		19980619
CN 1215729	A	19990505	CN 1998-103183		19980619
US 6610300	B1	20030826	US 1998-100703		19980619
BR 9802361	A	20000111	BR 1998-2361		19980622
TW 221847	B1	20041011	TW 1998-87119292		19981120
AU 764620	B2	20030828	AU 2002-18818		20020228
AU 2002018818	A5	20020418			
PRIORITY APPLN. INFO.:			EP 1997-201888	A	19970620
			AU 1998-73087	A3	19980619

AB The present invention relates to detoxified **immunogenic** derivs. of Clostridium perfringens β-toxin or an **immunogenic** fragment thereof that have as a characteristic that they carry a **mutation** in the β-toxin amino acid sequence, not found in the wild-type β-toxin amino acid sequence. Those regions of the β-toxin that are particularly suitable are those that form a transition domain between neutral and hydrophilic parts of the protein; thus, suitable target regions for **mutations** are located at position 62, 182, 197, between 80-103, 145-147, 281-291 relative to the peptide leader methionine, and the region downstream of the unique cysteine-292. The invention also relates to genes encoding such β-toxins, as well as to expression systems expressing such β-toxins. Expression plasmids were constructed suitable for Lactococcus lactis. Moreover, the invention relates to bacterial expression systems expressing a native β-toxin. Finally, the invention relates to vaccines based upon detoxified **immunogenic** derivs. of Clostridium perfringens β-toxin, and methods for the preparation of such vaccines. **Pigs** responded to vaccination with the genetically modified β-toxin by producing β-toxin-inhibiting anti-β-antibodies.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 01 Oct 1997
ACCESSION NUMBER: 1997:625617 HCAPLUS
DOCUMENT NUMBER: 127:289141
TITLE: **Vectors** based on recombinant defective viral genomes, and their use in the formulation of vaccines
INVENTOR(S): Enjuanes Sanchez, Luis; Plana Duran, Juan; Alonso Villanueva, Sara; Ballesteros Jarreno, Ma. Luisa; Castilla Castrillon, Joaquin; Gonzalez Martinez, Jose Manuel; Izeta Parmesan, Ander; Mendez Zunzunegui, Ana; et al.
PATENT ASSIGNEE(S): Cyanamid Iberica, S.A., Spain
SOURCE: PCT Int. Appl., 102 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Spanish
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9734008	A1	19970918	WO 1997-ES59	19970312
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
ES 2109189	A1	19980101	ES 1996-620	19960314
ES 2109189	B1	19980516		
CA 2248978	AA	19970918	CA 1997-2248978	19970312
AU 9719277	A1	19971001	AU 1997-19277	19970312
AU 729044	B2	20010125		
CN 1218513	A	19990602	CN 1997-194614	19970312
BR 9708061	A	20000104	BR 1997-8061	19970312
EP 1008652	A1	20000614	EP 1997-907111	19970312
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, SI, LT, LV, FI, RO				
JP 2000513565	T2	20001017	JP 1997-532304	19970312
RU 2199584	C2	20030227	RU 1998-118555	19970312
PL 188546	B1	20050228	PL 1997-328791	19970312
US 2004052775	A1	20040318	US 2003-444059	20030523

PRIORITY APPLN. INFO.:	ES 1996-620	A	19960314
	WO 1997-ES59	W	19970312
	US 1998-155003	A3	19980914

AB The **vectors** comprise a recombinant defective viral genome which expresses at least one antigen appropriate for inducing secretory and systemic immune responses or an antibody which provides protection against an infectious agent. The viral defective genome comprises the genome of a parental virus which has viral replicase recognition sites which are located at the 3' and 5' extremities, and comprises addnl. internal deletions, and wherein said defective viral genome depends on a complementing virus for its replication and encapsidation. Said **vectors** are appropriate to form a recombinant system which comprises said expression **vector** and a complementing virus. The system is appropriate for the preparation of mono- and polyvalent vaccines against infectious agents of various animal species, specially **pigs**, dogs and cats, and as vehicles for the expression of antibodies against infectious agents.

L23 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2005 ACS on STN
ED Entered STN: 09 May 1995
ACCESSION NUMBER: 1995:534790 HCAPLUS
DOCUMENT NUMBER: 122:310144
TITLE: Recombinant 46-kilodalton surface antigen (P46) of **Mycoplasma hyopneumoniae** expressed in Escherichia coli can be used for early specific diagnosis of mycoplasmal pneumonia of swine by enzyme-linked immunosorbent assay
AUTHOR(S): Futo, Satoshi; Seto, Yasuhiro; Okada, Munenori; Sato, Shizuo; Suzuki, Tohru; Kawai, Keiichi;

Imada, Yumiko; Mori, Yasuyuki
CORPORATE SOURCE: Faculty Agriculture, Gifu University, Gifu, 501-11, Japan
SOURCE: Journal of Clinical Microbiology (1995), 33(3), 680-3
CODEN: JCMIDW; ISSN: 0095-1137
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The 46-kDa surface antigen (P46) is the early and species-specific **immunogenic** protein of **Mycoplasma hyopneumoniae**. Three TGA codons encoding tryptophan in the P46 gene were replaced with TGG by an in vitro **mutagenesis** technique. The **mutated** P46 gene was expressed in Escherichia coli by using the chelating peptide tag system. The purified recombinant P46 was successfully used in an ELISA for detection of antibodies against **M. hyopneumoniae** in swine serum. It did not cross-react with sera from swine infected with Mycoplasma flocculate, Mycoplasma hyorhinis, or Mycoplasma hyosynoviae. With this method, mycoplasmal pneumonia of swine was detectable within 2 wk after infection.

FILE 'MEDLINE' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'BIOSIS' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'EMBASE' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'WPIDS' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'CONFSCI' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'SCISEARCH' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'JICST-EPLUS' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'JAPIO' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'CABA' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'AGRICOLA' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'VETU' ENTERED AT 12:22:22 ON 22 NOV 2005

FILE 'VETB' ENTERED AT 12:22:22 ON 22 NOV 2005

L24 120 S L18
L25 17 S L24 AND IMMUNOGEN?
L26 84 S L24 AND (PORCINE OR PIG OR PIGLET OR SWINE OR HOG)
L27 10 S L26 AND VECTOR

L28 7 S L24 AND ADMIN?
L29 28 S L25 OR L27 OR L28
L30 12 DUP REM L29 (16 DUPLICATES REMOVED)

L30 ANSWER 1 OF 12 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-420044 [39] WPIDS
DOC. NO. NON-CPI: N2004-333457
DOC. NO. CPI: C2004-157681
TITLE: Identifying an animal which has been vaccinated with an **immunogen**, comprises detecting the presence of antibodies or immune cells specific to recombinant substantially non-toxic E. coli heat-labile enterotoxin **mutant** in the animal.
DERWENT CLASS: B04 D16 P32
INVENTOR(S): MCVEY, D S
PATENT ASSIGNEE(S): (MCVE-I) MCVEY D S; (PFIZ) PFIZER PROD INC
COUNTRY COUNT: 108
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2004043286	A2	20040527	(200439)*	EN	37
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
US 2004170637	A1	20040902	(200458)		
AU 2003278496	A1	20040603	(200470)		
EP 1581256	A2	20051005	(200565)	EN	
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004043286	A2	WO 2003-IB5103	20031110
US 2004170637	A1 Provisional	US 2002-426421P	20021114
		US 2003-714679	20031114
AU 2003278496	A1	AU 2003-278496	20031110
EP 1581256	A2	EP 2003-769796	20031110
		WO 2003-IB5103	20031110

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2003278496	A1 Based on	WO 2004043286
EP 1581256	A2 Based on	WO 2004043286

PRIORITY APPLN. INFO: US 2002-426421P 20021114; US 2003-714679 20031114
AN 2004-420044 [39] WPIDS
AB WO2004043286 A UPAB: 20040621
NOVELTY - Identifying an animal which has been vaccinated with an

immunogen comprises detecting the presence of antibodies or immune cells that are specific to recombinant substantially non-toxic E. coli heat-labile enterotoxin **mutant** (rmLT) in the animal.

DETAILED DESCRIPTION - Identifying an animal which has been vaccinated with an **immunogen** comprises:

(a) providing a vaccine composition comprising the **immunogen** and a recombinant substantially non-toxic E. coli heat-labile enterotoxin **mutant** (rmLT);

(b) **administering** the vaccine composition to the animal;

(c) detecting the presence of antibodies or immune cells that are specific to rmLT in the animal to identify the animal as having been vaccinated with the vaccine preparation.

INDEPENDENT CLAIMS are also included for:

(1) determining that an animal that has been vaccinated with a vaccine composition, which includes an **immunogen** and a substantially nontoxic rmLT, comprising detecting the presence of antibodies or immune, cells that are specific to rmLT;

(2) marking or identifying a vaccine composition containing an **immunogen** by:

(a) adding a substantially nontoxic rmLT in the vaccine composition;

(b) **administering** the vaccine composition to an animal; and

(c) detecting presence of antibodies or immune cells that are specific to rmLT in the animal to identify the vaccine composition;

(3) enhancing the immunoprotective effects of an **immunogen** in a vaccine composition for **administration** to an animal, by adding to the vaccine composition a substantially nontoxic rmLT; and

(4) a vaccine composition for **administration** to an animal comprising an **immunogen**, a substantially non-toxic rmLT and an oil-in-water emulsion adjuvant.

ACTIVITY - Immunostimulant. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The method is useful for identifying an animal which has been vaccinated with rmLT (claimed). The rmLT is useful as an adjuvant to enhance the immunoprotective effects of an **immunogen** in a vaccine composition, or as a marker antigen.

Dwg.0/6

L30 ANSWER 2 OF 12 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN

ACCESSION NUMBER:	2004-083044 [08] WPIDS
DOC. NO. CPI:	C2004-034160
TITLE:	New **immunogenic Mycoplasma hyopneumoniae** polypeptide, useful in eliciting an immune response and in treating or preventing enzootic pneumonia.
DERWENT CLASS:	B04 C06 D16
INVENTOR(S):	DJORDJEVIC, S P; MINION, F C; MAHAIRAS, G G; MINION, C F
PATENT ASSIGNEE(S):	(IOWA) UNIV IOWA STATE RES FOUND INC; (NEWS-N) NEW SOUTH WALES DEPT AGRIC; (DJOR-I) DJORDJEVIC S P; (MINI-I) MINION F C; (NSWA-N) NSW AGRIC
COUNTRY COUNT:	103

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG

WO 2004003161 A2 20040108 (200408)* EN 81
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
US 2004091901 A1 20040513 (200432)
AU 2003280431 A1 20040119 (200447)
EP 1546357 A2 20050629 (200543) EN
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR
AU 2003280431 A8 20040119 (200562)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004003161	A2	WO 2003-US20460	20030627
US 2004091901	A1 Provisional	US 2002-392632P	20020628
		US 2003-607631	20030627
AU 2003280431	A1	AU 2003-280431	20030627
EP 1546357	A2	EP 2003-742308	20030627
		WO 2003-US20460	20030627
AU 2003280431	A8	AU 2003-280431	20030627

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2003280431	A1 Based on	WO 2004003161
EP 1546357	A2 Based on	WO 2004003161
AU 2003280431	A8 Based on	WO 2004003161

PRIORITY APPLN. INFO: US 2002-392632P 20020628; US 2003-607631 20030627

AN 2004-083044 [08] WPIDS

AB WO2004003161 A UPAB: 20040202

NOVELTY - A purified **immunogenic** polypeptide (I) comprising at least 8 consecutive residues of a sequence of 1010, 1032, 1194, 1539, 1121, 957, 945, 460, 451 or 1878 amino acids (EVEN SEQ ID NOS: 2-20), is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) an isolated nucleic acid or its **mutant** comprising a nucleotide sequence encoding (I);

(2) a **vector** comprising the nucleic acid of (1);

(3) a host cell comprising the **vector** of (2);

(4) a composition comprising (I) or the **vector** of (2) and a pharmaceutical carrier;

(5) eliciting an immune response in an animal;

(6) determining whether or nor an animal has an antibody reactive to (I); and

(7) a diagnostic kit for detecting the presence of an antibody in a test sample, where the antibody is reactive to (I), comprising (I).

ACTIVITY - Immunostimulant; Antiinflammatory. No biological data given.

MECHANISM OF ACTION - Vaccine.

USE - The **immunogenic** polypeptides and nucleic acids

are useful in eliciting an immune response and in treating or preventing enzootic pneumonia.
Dwg.0/22

L30 ANSWER 3 OF 12 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2004413275 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15317784
TITLE: **Mycoplasma hyopneumoniae** p65 surface lipoprotein is a lipolytic enzyme with a preference for shorter-chain fatty acids.
AUTHOR: Schmidt Jono A; Browning Glenn F; Markham Philip F
CORPORATE SOURCE: Department of Veterinary Science, Veterinary Preclinical Centre, The University of Melbourne, Parkville, Victoria 3010, Australia.
SOURCE: Journal of bacteriology, (2004 Sep) 186 (17) 5790-8. Journal code: 2985120R. ISSN: 0021-9193.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AAB67173; GENBANK-AAB70214
ENTRY MONTH: 200409
ENTRY DATE: Entered STN: 20040820
Last Updated on STN: 20040922
Entered Medline: 20040921

AB **Mycoplasma hyopneumoniae** is the most significant bacterial pathogen of the respiratory tract of swine. p65 is an immunodominant surface lipoprotein of **M. hyopneumoniae** that is specifically recognized during disease. Analysis of the translated amino acid sequence of the gene encoding p65 revealed similarity to the GDSL family of lipolytic enzymes. To examine the lipolytic activity of p65, the gene was cloned and expressed in Escherichia coli after truncation of the prokaryotic lipoprotein signal sequence and **mutagenesis** of the mycoplasma TGA tryptophan codons. After treatment with thrombin, the recombinant glutathione S-transferase (GST)-p65 protein yielded a 66-kDa fusion protein cleavage product corresponding in size to the mature p65 protein. The esterase activity of recombinant GST-p65 was indicated by the formation of a cleared zone on tributyrin agar plates and the hydrolysis of p-nitrophenyl esters of caproate (pNPC) and p-nitrophenyl esters of palmitate (pNPP). Lipase activity was indicated by the hydrolysis of the artificial triglyceride 1,2-O-dilauryl-rac-glycero-3-glutaric acid resorufin ester. Using pNPC and pNPP as substrates, recombinant GST-p65 had optimal activity between pHs 9.2 and 10.2 and at a temperature higher than 39 degrees C. Calcium ions did not increase the activity of recombinant GST-p65. Rabbit anti-p65 antibodies inhibited the activity of recombinant GST-p65 and also inhibited the growth of **M. hyopneumoniae** in vitro. Examination of the kinetic parameters of recombinant GST-p65 for the hydrolysis of pNPC and pNPP indicated a preference for the shorter fatty acid chain of pNPC. The physiological and/or pathogenic role of mycoplasma lipolytic enzymes has not been determined, but they are likely to play an important role in mycoplasmas' nutritional requirements for long-chain fatty acids and may reduce the function of lung surfactants in mycoplasma-induced respiratory diseases. This is the first report of the lipolytic activity of a lipid-modified surface **immunogen** of a mycoplasma.

L30 ANSWER 4 OF 12 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2004008055 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14704374
TITLE: Effects of gestational and lactational exposure to organochlorine compounds on cellular, humoral, and innate immunity in swine.
AUTHOR: Bilrha Houda; Roy Raynald; Wagner Eric; Belles-Isles Marthe; Bailey Janice L; Ayotte Pierre
CORPORATE SOURCE: Unite de recherche en Rhumatologie et Immunologie, Centre de Recherche du CHUL-CHUQ, Quebec, QC, Canada G1V 4G2.
SOURCE: Toxicological sciences : an official journal of the Society of Toxicology, (2004 Jan) 77 (1) 41-50. Journal code: 9805461. ISSN: 1096-6080.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200408
ENTRY DATE: Entered STN: 20040106
Last Updated on STN: 20040901
Entered Medline: 20040831

AB Few studies have characterized the immunotoxic potential of complex mixtures of organochlorines (OCs) that bear environmental relevance. We monitored immune parameters in male piglets exposed in utero and through lactation to an OC mixture which was designed to approximate that found in the traditional diet of Arctic aboriginal populations. Prepubertal sows were **administered** orally either corn oil (control group) or the OC mixture in increasing doses (low, medium, and high). The sows were inseminated with the semen from an untreated boar and OC treatment was continued throughout gestation and lactation (21 days). Blood was collected from the sows at delivery and monthly from piglets until 8 months of age for the determination of plasma OC concentrations and parameters of innate, cellular, and humoral immunity. Treatment with the OC mixture had no dose-dependent effect on the proportion of CD4+ and CD8+ T-cell subsets, and did not modulate the functional activity of the complement component C2. The proportion of CD4+CD8+ cells, CD8+DR+ cells, and the mitogenic lymphoproliferative response increased in OC-treated, 4-month-old piglets. At 6 months, the lymphoproliferative response to mitogen and the proportion CD4+CD8+ cells were still elevated in the OC-treated piglets, but the proportion of CD8+DR+ cells was decreased as compared to the controls. Animals in the high-dose group also exhibited a slight increase in **polymorphonuclear** leukocyte phagocytic activity at 8 months of age. Furthermore, the high dose decreased the antibody response to **Mycoplasma hyopneumoniae**.
Our results indicate that developmental exposure to an environmentally relevant OC mixture alters the immune function in swine.

L30 ANSWER 5 OF 12 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2003217192 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12738649
TITLE: Monoclonal antibodies to Escherichia coli-expressed P46 and P65 membranous proteins for specific immunodetection of **Mycoplasma hyopneumoniae** in lungs of infected **pigs**.
AUTHOR: Cheikh Saad Bouh K; Shareck F; Dea S
CORPORATE SOURCE: INRS-Institut Armand-Frappier, Universite du Quebec,

Laval, Quebec, Canada, H7V 1B.
SOURCE: Clinical and diagnostic laboratory immunology, (2003 May) 10 (3) 459-68.
Journal code: 9421292. ISSN: 1071-412X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 20030513
Last Updated on STN: 20040317
Entered Medline: 20040316

AB The P46 and P65 proteins of **Mycoplasma hyopneumoniae** are two membranous proteins carrying species-specific antigenic determinants. Based on the genomic sequence of the reference strain ATCC 25934, primers were designed for PCR amplification of the genes encoding entire P46 (1,260 bp) and P65 (1,803 bp) and N-terminally truncated P65(c) (1,200 bp). These primers were shown to be specific to **M. hyopneumoniae** since no DNA amplicons could be obtained with other mycoplasma species that commonly colonize the **porcine** respiratory tract. Both amplified genes were then cloned into the pGEX-4T-1 **vector** to be expressed in Escherichia coli cells as recombinant fusion proteins with glutathione S-transferase (GST). Prior to generation of expression constructs, TGA nonsense codons, exceptionally used for tryptophan residues by **M. hyopneumoniae**, had been converted to TGG codons by PCR-directed **mutagenesis**. Following induction by IPTG (isopropyl-beta-D-thiogalactopyranoside), both GST-P46 and GST-P65(c) recombinant fusion proteins were recovered by disrupting transformed cells by sonication, purified by affinity chromatography, and then cut with thrombin to release the P46 and P65(c) moieties. The enriched E. coli-expressed P46 and P65c proteins were used to immunize female BALB/c mice for the generation of anti-P46 and anti-P65(c) monoclonal antibodies (MAbs). The polypeptide specificities of MAbs obtained was confirmed by Western blotting with cell lysates prepared from the homologous strain. Cross-reactivity study of the anti-P46 and anti-P65(c) MAbs towards two other **M. hyopneumoniae** reference strains (ATCC 25095 and J strains) and Quebec field strains that had been isolated in culture, suggested that the MAbs obtained against both membranous proteins were directed against highly conserved species-specific epitopes. No reactivity to other mycoplasma species tested was demonstrated. Clinical signs and lesions suggestive of enzootic pneumonia were reproduced in specific-pathogen-free **pigs** that had been inoculated intratracheally with a virulent Quebec field strain (IAF-DM9827) of **M. hyopneumoniae**. Both anti-P46 and anti-P65(c) MAbs permitted effective detection by indirect immunofluorescence and indirect immunoperoxidase assay of **M. hyopneumoniae** in, respectively, frozen and formalin-fixed, paraffin-embedded lung sections from **pigs** that were killed after the 6- to 7-week observation period.

L30 ANSWER 6 OF 12 CABA COPYRIGHT 2005 CABI on STN
ACCESSION NUMBER: 2004:5533 CABA
DOCUMENT NUMBER: 20033190052
TITLE: Erysipelothrix rhusiopathiae YS-1: a live vaccine **vector** for mucosal delivery of recombinant proteins in **pigs**
AUTHOR: Shimoji, Y.

CORPORATE SOURCE: National Institute of Animal Health, 3-1-5 Kannondai, Tsukuba, Ibaraki 305-0856, Japan. shimoji@affrc.go.jp
SOURCE: Recent Research Developments in Microbiology, (2002) Vol. 6, No. 2, pp. 387-393. 37 ref. Publisher: Research Signpost. Trivandrum
PUB. COUNTRY: India
DOCUMENT TYPE: Journal
LANGUAGE: English
ENTRY DATE: Entered STN: 20040112
Last Updated on STN: 20040112

AB Erysipelothrix rhusiopathiae YS-1 is a stable, acapsular **mutant** that was rationally developed by a novel mechanism using the self-conjugative transposon Tn916. With a new expression system for surface display of heterologous proteins on E. rhusiopathiae, the C-terminal portion of the P97 adhesin of **Mycoplasma hyopneumoniae**, the causative agent of enzootic pneumonia in **pigs**, was successfully expressed on the YS-1 strain. Intranasal vaccination of **piglets** with the recombinant YS-1 strain induced complete protection against E. rhusiopathiae infection and greatly reduced the severity of lung lesions after challenge of a virulent **M. hyopneumoniae**.

L30 ANSWER 7 OF 12 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:212311 BIOSIS
DOCUMENT NUMBER: PREV200200212311
TITLE: **Immunogenicity** and antigenicity of recombinant E. coli-expressed P46 and P65 membranous proteins of **Mycoplasma hyopneumoniae**
.
AUTHOR(S): Cheikh Saad Bouh, K. [Reprint author]
CORPORATE SOURCE: INRS-Institut Armand-Frappier, Laval, PQ, Canada
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (2001) Vol. 101, pp. 385. print.
Meeting Info.: 101st General Meeting of the American Society for Microbiology. Orlando, FL, USA. May 20-24, 2001. American Society of Microbiology.
ISSN: 1060-2011.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 27 Mar 2002
Last Updated on STN: 27 Mar 2002

AB **Mycoplasma hyopneumoniae** is the causative agent of enzootic **pig** pneumonia. Its genome encodes for several immunodominant proteins, among which the P46, P65 and P74 membranous lipoproteins, the P36 cytosolic protein and the P97 adhesin carrying species-specific antigenic determinants. The P46 and P65 lipoproteins are major **immunogens** which trigger early humoral immune response in **pigs**, the C-terminal region of P65 corresponding to the most **immunogenic** domain. As for several Mycoplasma genes, TGA codons are translated as tryptophan residues rather than corresponding to translational stop signals as in mammalian and other bacterial cells. For **M. hyopneumoniae**, the ORFs encoding for P46 (1257 bp) and P65 (1803 bp) possess 3 and 1 TGA codons, respectively. In the present study, the entire P46 and P65

genes of the reference ATCC-25934 strain of **M. hyopneumoniae** were amplified by PCR and oligonucleotide primers were also designed such as to permit directed **mutagenesis** of the TGA codons in TGG. The **mutated** genes were ligated into the procaryotic pGEX-4T1 **vector** and used to transform competent E. coli, strain BL21 cells to produce recombinant (rec) proteins fused to glutathione S-transferase (GST). The affinity-purified GST-P65c and GST-P46 rec fusion proteins were used to immunize SPF **piglets**, as well as, Balb/c mice for production of monoclonal antibodies. Specific humoral immune responses were induced in both animal species, high antibody titers being detected by indirect ELISA. The specificities of MAbs towards the rec proteins and the native membranous proteins were confirmed by western blotting and ELISA. Clinical signs and lesions suggestive of enzootic pneumonia were reproduced in SPF **pigs** experimentally-infected with a virulent Quebec field strain (IAF-DM9827). **M. hyopneumoniae** could be recovered by both PCR and cultivation procedures from lung homogenates of **pigs** that were killed after the 3-week observation period. MAbs against both proteins permitted effective detection of **M. hyopneumoniae** in lungs from infected **pigs** by indirect immunofluorescence or immunoperoxydase.

L30 ANSWER 8 OF 12 MEDLINE on STN
ACCESSION NUMBER: 2001381435 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11162190
TITLE: Oral immunization of swine with attenuated Salmonella typhimurium aroA SL3261 expressing a recombinant antigen of **Mycoplasma hyopneumoniae** (NrdF) primes the immune system for a NrdF specific secretory IgA response in the lungs.
AUTHOR: Fagan P K; Walker M J; Chin J; Eamens G J; Djordjevic S P
CORPORATE SOURCE: Department of Biological Sciences, University of Wollongong, Camden, N.S.W., Australia.
SOURCE: Microbial pathogenesis, (2001 Feb) 30 (2) 101-10. Journal code: 8606191. ISSN: 0882-4010.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200107
ENTRY DATE: Entered STN: 20010709
Last Updated on STN: 20010709
Entered Medline: 20010705

AB Salmonella typhimurium SL3261 (aroA **mutant**) expressing a recombinant **Mycoplasma hyopneumoniae** antigen was used to orally immunize swine against porcine enzootic pneumonia. This construct, designated S. typhimurium aro A SL3261 (pKF1), expressed a recombinant protein containing the carboxy-terminal 11 kDa of a 42 kDa **M. hyopneumoniae** NrdF ribonucleotide reductase R2 subunit protein. Here we demonstrate that this antigen is present in all seven geographically diverse strains of **M. hyopneumoniae** tested, and is recognized by the swine immune system after experimental infection with the virulent **M. hyopneumoniae** Beaufort strain. The immune response of swine orally immunized twice with S. typhimurium SL3261 (pKF1) on day 0 and day 14 was evaluated. Oral immunization with S. typhimurium SL3261 (pKF1) primed the immune system to elicit a significant ($P<0.05$)

secretory IgA response against the 15 kDa NrdF antigen in the respiratory tract of swine, post-challenge, compared to control groups. Blood lymphocytes from swine immunized with S. typhimurium SL3261 (pKF1) proliferated significantly (P<0.05) following stimulation with **M. hyopneumoniae** whole-cell extracts compared to control groups 14 days post-vaccination. Following challenge with virulent **M. hyopneumoniae**, swine immunized with S. typhimurium SL3261 (pKF1) showed higher average daily weight gains and reduced lung pathology compared to control groups.

L30 ANSWER 9 OF 12 VETU COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2001-61950 VETU
TITLE: Procaryotic expression and antigenicity of **Mycoplasma hyopneumoniae** P46 and P65 membranous proteins.
AUTHOR: Cheikh Saad Bouh K; Wilson L; Boisvert A; Sawyer N; Shareck F; Dea S
CORPORATE SOURCE: Univ.Quebec
LOCATION: Laval, Que., Can.
SOURCE: Conf.Res.Workers Anim.Dis. (81 Meet., 152, 2000)
AVAIL. OF DOC.: Center of Microbiology and Biotechnology, INRS-Institut Armand-Frappier, University of Quebec, Laval, Quebec, Canada, H7NV 1B7.
LANGUAGE: English
DOCUMENT TYPE: Journal
FIELD AVAIL.: AB; LA; CT
AN 2001-61950 VETU
AB The **Mycoplasma hyopneumoniae** genome encodes for the immunodominant proteins P46, P65, P74, P36 and P97. The P46 and P65 lipoproteins are major **immunogens** which trigger an early humoral immune response in **pigs**, and in the case of P65, its C terminal region corresponds to the most **immunogenic** domain. In mycoplasmal genes, the codon TGA is translated as tryptophan rather than corresponding to a translational stop signal, as in mammalian and other bacterial cells. For **M. hyopneumoniae**, the ORFs encoding for the P46 (1257 bp) and P65 (1803 bp) possess 3 and 1 TGA codons, respectively. In this study, immunization of **piglets** and mice with affinity purified GST-P65 and GST-P46 recombinant fusion proteins resulted in high specific antibody responses. (conference abstract: Conference of Research Workers in Animal Diseases, 81st Annual Meeting, Chicago, Illinois, USA, November, 2000).
ABEX The entire P46 and P65 genes of the reference ATCC-25934 strain of **M. hyopneumoniae** were amplified by PCR, and oligonucleotide primers were designed to permit directed **mutagenesis** of the TGA codons in the TGG. The **mutated** genes were ligated into the procaryotic pGEX-4T1 **vector** and used to transform competent E. coli, strain BL21 cells, to produce recombinant proteins fused to glutathione S-transferase (GST).The affinity-purified GST-P65 and GST-P46 recombinant fusion proteins were used to immunize SPF **piglets**, as well as female Balb/c mice for monoclonal antibody (MAb) production. Specific humoral immune responses were induced in both animal species, high antibody titers being detected by indirect ELISA. The specificity of MAb towards the recombinant proteins and the native membranous proteins was confirmed by Western blotting and ELISA. (CLW)

L30 ANSWER 10 OF 12 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 95270693 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7751376
TITLE: Recombinant 46-kilodalton surface antigen (P46) of **Mycoplasma hyopneumoniae** expressed in Escherichia coli can be used for early specific diagnosis of mycoplasmal pneumonia of swine by enzyme-linked immunosorbent assay.
AUTHOR: Futo S; Seto Y; Okada M; Sato S; Suzuki T; Kawai K; Imada Y; Mori Y
CORPORATE SOURCE: United Graduate School of Agricultural Sciences, Gifu University, Japan.
SOURCE: Journal of clinical microbiology, (1995 Mar) 33 (3) 680-3.
Journal code: 7505564. ISSN: 0095-1137.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-D16682
ENTRY MONTH: 199506
ENTRY DATE: Entered STN: 19950629
Last Updated on STN: 19950629
Entered Medline: 19950622

AB The 46-kDa surface antigen (P46) is the early and species-specific **immunogenic** protein of **Mycoplasma hyopneumoniae**. Three TGA codons encoding tryptophan in the P46 gene were replaced with TGG by an in vitro **mutagenesis** technique. The **mutated** P46 gene was expressed in Escherichia coli by using the chelating peptide tag system. The purified recombinant P46 was successfully used in an enzyme-linked immunosorbent assay for detection of antibodies against **M. hyopneumoniae** in swine serum. It did not cross-react with sera from swine infected with Mycoplasma flocculate, Mycoplasma hyorhinis, or Mycoplasma hyosynoviae. With this method, mycoplasmal pneumonia of swine was detectable within 2 weeks after infection.

L30 ANSWER 11 OF 12 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN
ACCESSION NUMBER: 1994:704549 SCISEARCH
THE GENUINE ARTICLE: PP092
TITLE: BACTERIAL **IMMUNOGENS** AND PROTECTIVE IMMUNITY IN SWINE
AUTHOR: WANNEMUEHLER M J (Reprint); GALVIN J E
CORPORATE SOURCE: IOWA STATE UNIV SCI & TECHNOL, VET MED RES INST, DEPT MICROBIOL IMMUNOL & PREVENT MED, AMES, IA 50011 (Reprint)
COUNTRY OF AUTHOR: USA
SOURCE: VETERINARY IMMUNOLOGY AND IMMUNOPATHOLOGY, (OCT 1994) Vol. 43, No. 1-3, pp. 117-126.
ISSN: 0165-2427.
PUBLISHER: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
DOCUMENT TYPE: General Review; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 60
ENTRY DATE: Entered STN: 1994

Searcher : Shears 571-272-2528

Last Updated on STN: 1994
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB This review provides a limited discussion of antibody-mediated immune responses to bacterial pathogens which cause disease in swine. Serum antibody titers or responses have been used to correlate immunization or convalescence with protection from a given disease or infectious agent. Though much effort has been devoted to the elucidation of the host's antibody response to bacterial antigens, there are limited examples where an antibody response to a singular antigen has induced protection from disease. Antibody responses have been shown to be very effective in neutralizing bacterial exotoxins, e.g. Escherichia, Pasteurella, Actinobacillus, and inhibiting the ability of bacterial pathogens to colonize mucosal surfaces, e.g. Escherichia, Salmonella. The protective role of monospecific antibody responses to other bacterial components are less clear; however, antibody responses are generally polyclonal in nature and are an important component of the host immune response following the onset of disease. Anticapsular antibodies have been shown to enhance phagocytosis of numerous pathogens, e.g. Actinobacillus, Streptococcus, Pasteurella. Humoral immune responses directed against the lipopolysaccharide (LPS) of many Gram-negative organisms have been shown to enhance phagocytosis and the activation of complement, e.g. Salmonella. Anti-LPS antibodies have also aided in the identification of the serotypic diversity of Gram-negative organisms, e.g. Serpulina, Salmonella, Pasteurella, Antibody responses to the outer membrane proteins of Gram-negative organisms enhance phagocytosis, activation of complement, or inhibit bacterial adhesion to host cell. Adhesion of Gram-positive microorganisms, e.g. Staphylococcus, Streptococcus, Clostridium, to eukaryotic cells can be inhibited by antibody against the peptidoglycan and these peptidoglycan-specific antibodies may also facilitate opsonization of these organisms. Mycoplasma species have been shown to be metabolically inhibited by antibody directed against membrane proteins. In addition to the protective aspects of humoral immunity, the host's antibody response has been used as a diagnostic and epidemiological tool to identify or determine the prevelance of infectious agents.

L30 ANSWER 12 OF 12 SCISEARCH COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 1991:196511 SCISEARCH
THE GENUINE ARTICLE: FD915
TITLE: CLONING AND EXPRESSION OF A SPECIES-SPECIFIC EARLY **IMMUNOGENIC** 36-KILODALTON PROTEIN OF **MYCOPLASMA-HYOPNEUMONIAE** IN ESCHERICHIA-COLI
AUTHOR: STRASSER M (Reprint); FREY J; BESTETTI G; KOBISCH M; NICOLET J
CORPORATE SOURCE: UNIV BERN, INST VET BACTERIOL, CH-3012 BERN, SWITZERLAND; UNIV BERN, INST VET PATHOL, CH-3012 BERN, SWITZERLAND; CNEVA, LCRAP, PATHOL PORCINE STN, F-22440 PLOUFRAGAN, FRANCE
COUNTRY OF AUTHOR: SWITZERLAND; FRANCE
SOURCE: INFECTION AND IMMUNITY, (APR 1991) Vol. 59, No. 4, pp. 1217-1222.
ISSN: 0019-9567.
PUBLISHER: AMER SOC MICROBIOLOGY, 1325 MASSACHUSETTS AVENUE, NW, WASHINGTON, DC 20005-4171.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE

LANGUAGE: English
REFERENCE COUNT: 25
ENTRY DATE: Entered STN: 1994
Last Updated on STN: 1994
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB **Mycoplasma hyopneumoniae**, the etiologic agent of **porcine** enzootic pneumonia, synthesizes a 36-kDa protein which is an early and strong **immunogenic** factor in experimentally and naturally infected **swine**. The gene encoding this protein was cloned by screening a gene library of **M. hyopneumoniae** DNA with rabbit hyperimmune serum made against whole **M. hyopneumoniae** cells and convalescent-phase **swine** serum. Analysis of the recombinant protein expressed in Escherichia coli by immunoblot techniques showed that the protein is expressed in E. coli in its full length and does not cross-react with proteins from M. flocculare or M. hyorhinis. Genetic analysis showed that the gene was expressed from the lac promoter of the **vector** and seems to be translationally initiated from its own ribosome binding site. Subcloning in a transcriptional fusion **vector** to optimize expression resulted in production of the 36-kDa protein in E. coli at levels up to 30% of total protein.

FILE 'MEDLINE' ENTERED AT 12:24:05 ON 22 NOV 2005

FILE LAST UPDATED: 16 NOV 2005 (20051116/UP). FILE COVERS 1950 TO DATE.

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP RLOAD at an arrow promt (=>). See also:

http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

L31	43	SEA	FILE=MEDLINE ABB=ON	PLU=ON	"MYCOPLASMA HYOPNEUMONIAE" /CT
L32	18814	SEA	FILE=MEDLINE ABB=ON	PLU=ON	MUTAGENESIS/CT
L33	54271	SEA	FILE=MEDLINE ABB=ON	PLU=ON	"POLYMORPHISM, GENETIC"/CT
L34	0	SEA	FILE=MEDLINE ABB=ON	PLU=ON	L31 AND (L32 OR L33)

L31	43	SEA	FILE=MEDLINE ABB=ON	PLU=ON	"MYCOPLASMA HYOPNEUMONIAE" /CT
L35	124920	SEA	FILE=MEDLINE ABB=ON	PLU=ON	SWINE/CT
L36	39	SEA	FILE=MEDLINE ABB=ON	PLU=ON	L31 AND L35
L37	4	SEA	FILE=MEDLINE ABB=ON	PLU=ON	L36 AND ADMINISTRATION & DOSAGE/CT

L37 ANSWER 1 OF 4 MEDLINE on STN

ACCESSION NUMBER: 2005428351 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16094568
TITLE: Efficacy of tulathromycin injectable solution for the treatment of naturally occurring Swine respiratory disease.
AUTHOR: Nutsch Robert G; Hart Fred J; Rooney Kathleen A; Weigel Daniel J; Kilgore W Randal; Skogerboe Terry L
CORPORATE SOURCE: Pfizer Animal Health, Veterinary Medicine Research and Development, Kalamazoo, MI 49001, USA.
SOURCE: Veterinary therapeutics : research in applied veterinary medicine, (2005 Summer) 6 (2) 214-24. Journal code: 100936368. ISSN: 1528-3593.
PUB. COUNTRY: United States
DOCUMENT TYPE: (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(MULTICENTER STUDY)
(RANDOMIZED CONTROLLED TRIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200510
ENTRY DATE: Entered STN: 20050815
Last Updated on STN: 20051021
Entered Medline: 20051020

ED Entered STN: 20050815
Last Updated on STN: 20051021
Entered Medline: 20051020

AB Tulathromycin, a novel triamilide antimicrobial, was evaluated for treatment of swine respiratory disease (SRD) in field efficacy studies involving 720 pigs in six North American swine herds. In each study, feeder pigs with clinical SRD were randomly assigned in equal numbers to a group treated with tulathromycin given as a single injection at 2.5 mg/kg of body weight or to a saline-treated control group. Four of the studies included a third group treated with ceftiofur sodium for 3 consecutive days at 3 mg/kg of body weight. Pigs were treated on day 0 and evaluated for treatment response on day 7. In each study, 10 or more nontreated pigs and saline-treated pigs that did not respond to treatment underwent necropsies to obtain lung samples that were evaluated for SRD pathogens. The overall cure rate was 46.4% for saline-treated pigs, 71.1% for tulathromycin-treated pigs, and 63.1% for ceftiofur-treated pigs. The cure rate for tulathromycin-treated pigs was significantly higher than for saline-treated pigs (P = .0116). Mortality from SRD occurred in 24 control pigs, seven tulathromycin-treated pigs, and one ceftiofur-treated pig. The mortality rate was significantly lower for both the tulathromycin- and ceftiofur-treated pigs compared with those treated with saline (P = .0148 and P = .0195, respectively). Actinobacillus pleuropneumoniae, Pasteurella multocida, Haemophilus parasuis, and Mycoplasma hyopneumoniae, bacteria commonly associated with SRD, were isolated from SRD-affected pigs. Under field conditions, tulathromycin injectable solution given as a single IM dose of 2.5 mg/kg of body weight was safe and effective in the treatment of SRD.

L37 ANSWER 2 OF 4 MEDLINE on STN
ACCESSION NUMBER: 2005428349 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16094566
TITLE: Evaluation of tulathromycin for the treatment of pneumonia following experimental infection of swine with Mycoplasma hyopneumoniae.
AUTHOR: McKelvie Jo; Morgan Jeremy H; Nanjiani Ian A;

Sherington John; Rowan Tim G; Sunderland Simon J
CORPORATE SOURCE: Veterinary Medicine Research and Development, Pfizer Ltd, Sandwich, Kent, UK.
SOURCE: Veterinary therapeutics : research in applied veterinary medicine, (2005 Summer) 6 (2) 197-202. Journal code: 100936368. ISSN: 1528-3593.
PUB. COUNTRY: United States
DOCUMENT TYPE: (CLINICAL TRIAL) Journal; Article; (JOURNAL ARTICLE) (RANDOMIZED CONTROLLED TRIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200510
ENTRY DATE: Entered STN: 20050815
Last Updated on STN: 20051021
Entered Medline: 20051020
ED Entered STN: 20050815
Last Updated on STN: 20051021
Entered Medline: 20051020
AB Tulathromycin was evaluated in the treatment of pneumonia in weaned pigs inoculated intranasally with Mycoplasma hyopneumoniae. Five days postchallenge, the pigs were randomized to treatment with a single IM administration of saline, a single IM administration of tulathromycin (2.5 mg/kg; day 0), or three IM administrations of enrofloxacin (5.0 mg/kg; days 0, 1, 2). Pigs were necropsied on day 12 or 13. Unchallenged controls remained healthy with no lung pathology. Compared with saline, coughing, mean lung lesion score, and proportional lung weight were significantly reduced and weight gain was significantly greater for tulathromycin-treated pigs ($P < .05$). Compared with enrofloxacin, there were no significant differences in proportional lung weight or weight gains, but coughing and lung lesion scores were greater for tulathromycin-treated pigs ($P < .05$). Tulathromycin was effective in the treatment of pneumonia following experimental infection with M. hyopneumoniae.

L37 ANSWER 3 OF 4 MEDLINE on STN
ACCESSION NUMBER: 2005242233 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15879541
TITLE: Efficacy of in-feed medication with tylosin for the treatment and control of Mycoplasma hyopneumoniae infections.
AUTHOR: Vicca J; Maes D; Jonker L; de Kruif A; Haesebrouck F
CORPORATE SOURCE: Department of Reproduction, Obstetrics and Herd Health, Faculty of Veterinary Medicine, Ghent University, Salisburylaan 133, B-9820 Merelbeke, Belgium.
SOURCE: Veterinary record, (2005 May 7) 156 (19) 606-10. Journal code: 0031164. ISSN: 0042-4900.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200508
ENTRY DATE: Entered STN: 20050510
Last Updated on STN: 20050815
Entered Medline: 20050811
ED Entered STN: 20050510
Last Updated on STN: 20050815
Entered Medline: 20050811
AB The efficacy of in-feed medication with tylosin for the treatment of

enzootic pneumonia was examined in an experimental Mycoplasma hyopneumoniae infection model. One group of 10 conventional M. hyopneumoniae-free pigs was inoculated intratracheally with a highly virulent field isolate of M. hyopneumoniae; a second group of 10 pigs was inoculated in the same way and after 12 days was given tylosin at 100 mg/kg feed for 21 days; a third group of 10 pigs was inoculated with sterile culture medium, and these pigs were not given tylosin. The pigs were examined daily for clinical signs and each pig was given a respiratory disease score. Thirty-three days after they had been infected the pigs were euthanased, the lung lesions were quantified and samples of lung were processed for immunofluorescence testing for M. hyopneumoniae. The mean (sd) respiratory disease and lung lesion scores were significantly higher ($P<0.05$) in both the infected groups than in the uninfected group. Between 23 and 33 days after infection the mean respiratory disease score of the pigs treated with tylosin was 0.54 (0.22), significantly ($P<0.05$) lower than that of the infected pigs which were left untreated, 1.54 (0.46); similarly, their average lung lesion score, 1.72 (1.20), was significantly lower than that of the untreated pigs, 5.27 (3.85).

L37 ANSWER 4 OF 4 MEDLINE on STN
ACCESSION NUMBER: 2004252126 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15149792
TITLE: Effects of Mycoplasma hyopneumoniae vaccine on pigs naturally infected with M. hyopneumoniae and porcine reproductive and respiratory syndrome virus.
AUTHOR: Moreau Isabelle A; Miller Gay Y; Bahnson Peter B
CORPORATE SOURCE: Department of Veterinary Clinical Medicine, The University of Illinois at Urbana-Champaign, Urbana, IL, USA.
SOURCE: Vaccine, (2004 Jun 2) 22 (17-18) 2328-33.
Journal code: 8406899. ISSN: 0264-410X.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: (CLINICAL TRIAL)
Journal; Article; (JOURNAL ARTICLE)
(RANDOMIZED CONTROLLED TRIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200501
ENTRY DATE: Entered STN: 20040520
Last Updated on STN: 20050119
Entered Medline: 20050118
ED Entered STN: 20040520
Last Updated on STN: 20050119
Entered Medline: 20050118
AB The effects of a single-dose Mycoplasma hyopneumoniae vaccine was studied in growing pigs. Each of 24 vaccinated cohorts of approximately 1200 pigs reared in separate barns was matched by time, farm site, and sex with unvaccinated cohorts. Pigs were naturally exposed to M. hyopneumoniae and porcine reproductive respiratory syndrome virus (PRRSv). Daily weight gain was 42 g per pig per day higher and mortality rate was 15.2/1000 pigs lower for vaccinated cohorts. Age at PRRSv onset was associated with mortality rate, but did not modify vaccine effects. M. hyopneumoniae vaccination was effective in promoting growth in spite of concurrent PRRSv infection.

FILE 'USPATFULL' ENTERED AT 12:27:17 ON 22 NOV 2005

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 22 Nov 2005 (20051122/PD)
FILE LAST UPDATED: 22 Nov 2005 (20051122/ED)
HIGHEST GRANTED PATENT NUMBER: US6968571
HIGHEST APPLICATION PUBLICATION NUMBER: US2005257307
CA INDEXING IS CURRENT THROUGH 22 Nov 2005 (20051122/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 22 Nov 2005 (20051122/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2005

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>>> publications, starting in 2001, for the inventions covered in <<<
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>>> /PK, etc. <<<

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>>> enter this cluster. <<<
>>> <<<
>>> Use USPATALL when searching terms such as patent assignees, <<<
>>> classifications, or claims, that may potentially change from <<<
>>> the earliest to the latest publication. <<<

This file contains CAS Registry Numbers for easy and accurate substance identification.

L45 24 SEA ABB=ON PLU=ON ((MYCOPLASM? OR M)(W)HYOPNEUMON?)(S)(MUTAT? OR MUTANT? OR MUTAGEN? OR POLYMORPH? OR POLY MORPH?)
L46 3 SEA ABB=ON PLU=ON L45(S)IMMUNOGEN?
L47 7 SEA ABB=ON PLU=ON L45(S)(PORCINE OR HOG OR PIG OR PIGLET OR SWINE)
L48 3 SEA ABB=ON PLU=ON L45(S)VECTOR
L49 2 SEA ABB=ON PLU=ON L45(S)ADMIN?
L50 10 SEA ABB=ON PLU=ON L46 OR L47 OR L48 OR L49

L50 ANSWER 1 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2005:62586 USPATFULL
TITLE: Safe mutant viral vaccines
INVENTOR(S): Welch, Siao-Kun Wan, Kalamazoo, MI, UNITED STATES
Calvert, Jay Gregory, Otsego, MI, UNITED STATES
O'Hara, Michael K., Kalamazoo, MI, UNITED STATES
Cao, Xuemei, Scituate, MA, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2005053621	A1	20050310	
APPLICATION INFO.:	US 2004-893712	A1	20040716	(10)

	NUMBER	DATE	
PRIORITY INFORMATION:	US 2003-490834P	20030729	(60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: SCULLY SCOTT MURPHY & PRESSER, PC, 400 GARDEN CITY PLAZA, GARDEN CITY, NY, 11530
NUMBER OF CLAIMS: 40
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 1 Drawing Page(s)
LINE COUNT: 2359
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides safe vaccines and methods of preparing such vaccines. The vaccines of the present invention contain at least two live mutant viruses of the same family or nucleic acid molecules encoding such viruses, wherein each of the two viruses or the encoding nucleic adds contains a mutation that confers a desirable phenotype and the mutations in the viruses reside in the same genomic site such that the mutant viruses cannot recombine with each other to eliminate the mutations.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 2 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2004:120491 USPATFULL
TITLE: Immunogenic Mycoplasma hyopneumoniae polypeptides
INVENTOR(S): Minion, F. Chris, Ames, IA, UNITED STATES
Djordjevic, Steven P., Ema Heights, AUSTRALIA

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2004091901	A1	20040513	
APPLICATION INFO.:	US 2003-607631	A1	20030627	(10)

	NUMBER	DATE	
PRIORITY INFORMATION:	US 2002-392632P	20020628	(60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: FISH & RICHARDSON P.C., 3300 DAIN RAUSCHER PLAZA, 60 SOUTH SIXTH STREET, MINNEAPOLIS, MN, 55402
NUMBER OF CLAIMS: 27
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 23 Drawing Page(s)
LINE COUNT: 4128
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Mycoplasma hyopneumoniae polypeptides and nucleic acids, as well as nucleic acid expression vectors and host cells containing nucleic acid vectors are provided. In addition, compositions containing M. hyopneumoniae polypeptides and nucleic acids are provided for use in methods of treating swine to prevent enzootic pneumonia. Furthermore, the invention provides diagnostic tests for the detecting of M. hyopneumoniae infection in swine herds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 3 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2003:232060 USPATFULL
TITLE: Vaccine adjuvant
INVENTOR(S): Minion, F. Chris, Ames, IA, UNITED STATES
Menon, Sreekumar A., Philadelphia, PA, UNITED STATES
Mahairas, Gregory G., Seattle, WA, UNITED STATES
PATENT ASSIGNEE(S): Iowa State University Research Foundation, Inc., an

Iowa corporation (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003162260	A1	20030828
APPLICATION INFO.:	US 2003-384948	A1	20030310 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 2000-692064, filed on 19 Oct 2000, GRANTED, Pat. No. US 6537552

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-160249P	19991019 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: FISH & RICHARDSON P.C., 3300 DAIN RAUSCHER PLAZA, 60 SOUTH SIXTH STREET, MINNEAPOLIS, MN, 55402
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Page(s)
LINE COUNT: 1632
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention features fusion agents such as fusion proteins that are useful for the treatment of and prevention from diseases that are susceptible to the effects of cellular (Th1 type) immune responses. Also encompassed by the invention are nucleic acids encoding the fusion proteins of the invention, vectors containing the nucleic acids, and cells containing the vectors. The invention includes methods of making and using the fusion agents of the invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 4 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2003:176178 USPATFULL
TITLE: Temperature-sensitive live vaccine for Mycoplasma hyopneumoniae
INVENTOR(S): Pijoan, Carlos, Shoreview, MN, United States
PATENT ASSIGNEE(S): Regents of the University of Minnesota, Minneapolis, MN, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6585981	B1	20030701
APPLICATION INFO.:	US 2000-627006		20000727 (9)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Graser, Jennifer E.
LEGAL REPRESENTATIVE: Schwegman, Lundberg, Woessner & Kluth, P.A.
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 593
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a live temperature-sensitive vaccine for Mycoplasma hyopneumoniae. The present invention also provides methods of vaccinating a swine against colonization or infection of Mycoplasma hyopneumoniae.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 5 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2003:169096 USPATFULL
TITLE: Nucleic acid sequences and expression system relating to Enterococcus faecium for diagnostics and therapeutics
INVENTOR(S): Doucette-Stamm, Lynn A., Framingham, MA, United States
Bush, David, Somerville, MA, United States
PATENT ASSIGNEE(S): Genome Therapeutics Corporation, Waltham, MA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6583275	B1	20030624
APPLICATION INFO.:	US 1998-107532		19980630 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-85598P	19980514 (60)
	US 1997-51571P	19970702 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Marschel, Ardin H.
LEGAL REPRESENTATIVE: Genome Therapeutics Corporation
NUMBER OF CLAIMS: 34
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 15265
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides isolated polypeptide and nucleic acid sequences derived Enterococcus faecium that are useful in diagnosis and therapy of pathological conditions; antibodies against the polypeptides; and methods for the production of the polypeptides. The invention also provides methods for the detection, prevention and treatment of pathological conditions resulting from bacterial infection.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 6 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2003:81455 USPATFULL
TITLE: Vaccine adjuvant
INVENTOR(S): Minion, F. Chris, Ames, IA, United States
Menon, Sreekumar A., Philadelphia, PA, United States
Mahairas, Gregory G., Seattle, WA, United States
PATENT ASSIGNEE(S): Iowa State University Research Foundation, Ames, IA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6537552	B1	20030325
APPLICATION INFO.:	US 2000-692064		20001019 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-160429P	19991019 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Smith, Lynette R. F.
ASSISTANT EXAMINER: Shahnan-Shah, Khatol S
LEGAL REPRESENTATIVE: Fish & Richardson P.C.
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 10 Drawing Figure(s); 7 Drawing Page(s)
LINE COUNT: 1611
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention features fusion agents such as fusion proteins that are useful for the treatment of and prevention from diseases that are susceptible to the effects of cellular (Th1 type) immune responses. Also encompassed by the invention are nucleic acids encoding the fusion proteins of the invention, vectors containing the nucleic acids, and cells containing the vectors. The invention includes methods of making and using the fusion agents of the invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 7 OF 10 USPATFULL on STN
ACCESSION NUMBER: 1998:91598 USPATFULL
TITLE: DNA sequences coding for mycoplasma hyopneumoniae surface antigens, corresponding proteins and use in vaccines and diagnostic procedures
INVENTOR(S): Wise, Kim S., Columbia, MO, United States
McIntosh, Mark A., Columbia, MO, United States
PATENT ASSIGNEE(S): The Curators of the University of Missouri, Columbia, MO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5788962		19980804
APPLICATION INFO.:	US 1996-703947		19960828 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1995-373957, filed on 17 Jan 1995, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Housel, James C.
ASSISTANT EXAMINER: Shaver, Jennifer
LEGAL REPRESENTATIVE: Fishel, Grace J.
NUMBER OF CLAIMS: 3
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 9 Drawing Figure(s); 17 Drawing Page(s)
LINE COUNT: 713
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Mycoplasma hyopneumoniae P65 surface antigens prepared by recombinant DNA or synthetic methods, protein antigens encoded by P65 gene, an expression vector and transformed host containing the antigens, a vaccine based on such antigens, methods of treating swine, etc. to prevent enzootic pneumonia using that vaccine and diagnostic tests to detect the presence of Mycoplasma hyopneumoniae.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 8 OF 10 USPATFULL on STN
ACCESSION NUMBER: 97:91172 USPATFULL
TITLE: Vaccines against Aujeszky's disease and other animal diseases containing pseudorabies virus

mutants
INVENTOR(S): Peeters, Bernardus Petrus Hubertus, Lelystad, Netherlands
Pol, Jan Marie Antonius, Lelystad, Netherlands
Gielkens, Arnold Leonard Josef, Lelystad, Netherlands
Moormann, Robertus Jacobus Maria, Dronten, Netherlands
PATENT ASSIGNEE(S): Akzo Nobel N.V., Arnhem, Netherlands (non-U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5674500		19971007	
	WO 9401573		19940120	
APPLICATION INFO.:	US 1995-373325		19950109	(8)
	WO 1993-NL146		19930708	
			19950109	PCT 371 date
			19950109	PCT 102(e) date

	NUMBER	DATE
PRIORITY INFORMATION:	EP 1992-202096	19920709

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Mosher, Mary E.
LEGAL REPRESENTATIVE: Gormley, Mary E.
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 3 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 1089
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides vaccines for preventing and controlling animal diseases, comprising a pseudorabies virus containing glycoprotein gp50 and having a mutation in its gp50 gene. The vaccines are suitable for use against Aujeszky's disease (pseudorabies), or against other animal diseases when the mutation is an insertion comprising a heterologous gene encoding an antigen corresponding to said animal disease. The pseudorabies virus may additionally have at least one mutation in one of its other genes, such as the gp63 gene or the gI gene. The vaccines are unable to spread from vaccinated to non-vaccinated animals.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 9 OF 10 USPATFULL on STN
ACCESSION NUMBER: 95:92697 USPATFULL
TITLE: DNA encoding 85kd polypeptide useful in diagnosis of Mycoplasma infections in animals
INVENTOR(S): Kuner, Jerry, Longmont, CO, United States
Ko, Christine, Boulder, CO, United States
PATENT ASSIGNEE(S): Synergen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5459048		19951017	
APPLICATION INFO.:	US 1993-153495		19931117	(8)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 1992-962075, filed on			

16 Oct 1992, now abandoned which is a continuation of Ser. No. US 1990-502640, filed on 2 Apr 1990, now abandoned which is a continuation-in-part of Ser. No. US 1988-196891, filed on 18 May 1988, now abandoned which is a continuation of Ser. No. US 1986-889153, filed on 25 Jul 1986, now abandoned

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Lacey, David L.
ASSISTANT EXAMINER: Nisbet, T. Michael
LEGAL REPRESENTATIVE: Finnegan, Henderson, Farabow, Garrett & Dunner
NUMBER OF CLAIMS: 6
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 39 Drawing Figure(s); 39 Drawing Page(s)
LINE COUNT: 2298
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A class of polypeptides useful in an in vitro diagnosis of Mycoplasma infection in animals is disclosed. These polypeptides are also capable of inducing an immune response in swine which were previously not exposed to Mycoplasma. Recombinant DNA methods for the production of these polypeptides and certain phage vectors and DNA sequences useful in these methods are also disclosed. Methods of vaccinating animals utilizing a vaccination composition which includes these polypeptides is also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L50 ANSWER 10 OF 10 USPATFULL on STN
ACCESSION NUMBER: 93:71858 USPATFULL
TITLE: Intranasal administration of Mycoplasma hyopneumoniae antigen
INVENTOR(S): Faulds, Daryl, Millbrae, CA, United States
PATENT ASSIGNEE(S): ML Technology Ventures, L.P., New York, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5240706		19930831	
APPLICATION INFO.:	US 1989-334586		19890407	(7)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wityshyn, Michael G.
ASSISTANT EXAMINER: Mohamed, Abdel A.
LEGAL REPRESENTATIVE: Olstein, Elliot M., Lillie, Raymond J.
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 19 Drawing Figure(s); 20 Drawing Page(s)
LINE COUNT: 1107
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for protecting an animal, in particular swine, against mycoplasma pneumonia by administering intranasally to the animal a vaccine containing one or more proteins which elicits an antibody which recognizes a Mycoplasma hyopneumoniae antigen which lacks immunosuppressive activity. A particularly preferred intranasal vaccine includes the 74.5 kDa antigen of Mycoplasma hyopneumoniae. The 74.5 kDa antigen may be of recombinant origin.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

(FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB, USPATFULL' ENTERED AT 12:32:14 ON 22 NOV 2005)

L51	412	SEA ABB=ON	PLU=ON	("MINION F"? OR "MINION C"?)/AU
L52	760	SEA ABB=ON	PLU=ON	"DJORDJEVIC S"?/AU
L53	14	SEA ABB=ON	PLU=ON	L51 AND L52
L54	1158	SEA ABB=ON	PLU=ON	L51 OR L52
L55	32	SEA ABB=ON	PLU=ON	L54 AND L18
L56	24	SEA ABB=ON	PLU=ON	L55 AND (SWINE OR PIG OR PIGLET OR HOG OR PORCINE)
L57	35	SEA ABB=ON	PLU=ON	L53 OR L56
L58	12	DUP REM L57	(23 DUPLICATES REMOVED)	

- Author(s)

L58 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1

ACCESSION NUMBER: 2005:1064099 CAPLUS

TITLE: Characterization of In Vivo Acquired Resistance of **Mycoplasma hyopneumoniae** to Macrolides and Lincosamides

AUTHOR(S): Stakenborg, Tim; Vicca, Jo; Butaye, Patrick; Maes, Dominiek; **Minion, F. Chris**; Peeters, Johan; De Kruif, Aart; Haesebrouck, Freddy

CORPORATE SOURCE: Veterinary and Agrochemical Research Centre, Brussels, Belg.

SOURCE: Microbial Drug Resistance (Larchmont, NY, United States) (2005), 11(3), 290-294
CODEN: MDREFJ; ISSN: 1076-6294

PUBLISHER: Mary Ann Liebert, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Macrolides and related antibiotics are used to control mycoplasma infections in the **pig** industry worldwide. Some **porcine** mycoplasmas, however, survive these treatments by acquiring resistance. The mechanism of acquired resistance to macrolides and lincosamides was studied in more detail for **Mycoplasma hyopneumoniae** by comparing both the phenotype and genotype of a resistant field isolate to five susceptible isolates. The MICs were significantly higher for the resistant strain for all antibiotics tested. The MICs for the 16-membered macrolide tylosin ranged from 8 to 16 μg for the resistant strain and from 0.03 to 0.125 μg/mL for the five susceptible strains. The MICs for the 15-membered macrolides and lincosamides were higher than 64 μg/mL for the resistant strain while only 0.06 to 0.5 μg/mL for the susceptible strains. **Mycoplasma hyopneumoniae** strains are intrinsically resistant to the 14-membered macrolides due to a G2057A transition (E. coli numbering) in their 23S rDNA. Therefore, high MICs were observed for all strains, although the MICs for the resistant strain were clearly increased. An addnl., acquired A2058G point **mutation** was found in the 23S rRNA gene of the resistant strain. No differences linked to resistance were found in the ribosomal proteins L4 and L22. The present study showed that 23S rRNA **mutations** resulting in resistance to macrolides and lincosamides as described in other Mycoplasma spp. also occur under field conditions in **M . hyopneumoniae**.

L58 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2

ACCESSION NUMBER: 2004:20823 CAPLUS

DOCUMENT NUMBER: 140:110097

TITLE: Immunogenic polypeptides of **Mycoplasma**

hyopneumoniae and encoding nucleic acids for diagnosis and therapy

INVENTOR(S): **Minion, Chris F.**; Mahairas, Gregory G.; **Djordjevic, Steven P.**

PATENT ASSIGNEE(S): Iowa State University Research Foundation, Inc., USA; NSW Agriculture; Department of Agriculture For and On Behalf of The State of New South Wales

SOURCE: PCT Int. Appl., 81 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004003161	A2	20040108	WO 2003-US20460	20030627
WO 2004003161	A3	20050428		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004091901	A1	20040513	US 2003-607631	20030627
EP 1546357	A2	20050629	EP 2003-742308	20030627
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

PRIORITY APPLN. INFO.: US 2002-392632P P 20020628

WO 2003-US20460 W 20030627

AB **Mycoplasma hyopneumoniae** polypeptides and nucleic acids, as well as nucleic acid expression vectors and host cells containing nucleic acid vectors are provided. In addition, compns. containing **M. hyopneumoniae** polypeptides and nucleic acids are provided for use in methods of treating **swine** to prevent enzootic pneumonia. Furthermore, the invention provides diagnostic tests for the detecting of **M. hyopneumoniae** infection in **swine** herds.

L58 ANSWER 3 OF 12 USPATFULL on STN

ACCESSION NUMBER: 2004:120491 USPATFULL

TITLE: Immunogenic **Mycoplasma hyopneumoniae** polypeptides

INVENTOR(S): **Minion, F. Chris**, Ames, IA, UNITED STATES
Djordjevic, Steven P., Ema Heights, AUSTRALIA

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2004091901	A1	20040513	
APPLICATION INFO.:	US 2003-607631	A1	20030627	(10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-392632P	20020628 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: FISH & RICHARDSON P.C., 3300 DAIN RAUSCHER PLAZA, 60 SOUTH SIXTH STREET, MINNEAPOLIS, MN, 55402
NUMBER OF CLAIMS: 27
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 23 Drawing Page(s)
LINE COUNT: 4128
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB **Mycoplasma hyopneumoniae** polypeptides and nucleic acids, as well as nucleic acid expression vectors and host cells containing nucleic acid vectors are provided. In addition, compositions containing **M. hyopneumoniae** polypeptides and nucleic acids are provided for use in methods of treating **swine** to prevent enzootic pneumonia. Furthermore, the invention provides diagnostic tests for the detecting of **M. hyopneumoniae** infection in **swine** herds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L58 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2004:372063 CAPLUS
DOCUMENT NUMBER: 141:85300
TITLE: Proteolytic processing of the Mycoplasma hyopneumoniae cilium adhesin
AUTHOR(S): **Djordjevic, Steven P.**; Cordwell, Stuart J.; Djordjevic, Michael A.; Wilton, Jody; **Minion, F. Chris**
CORPORATE SOURCE: Elizabeth Macarthur Agricultural Institute, New South Wales Agriculture, Camden, 2570, Australia
SOURCE: Infection and Immunity (2004), 72(5), 2791-2802
CODEN: INFIBR; ISSN: 0019-9567
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB M. hyopneumoniae is an economically significant swine pathogen that colonizes the respiratory ciliated epithelial cells. Cilium adherence is mediated by P97, a surface protein containing a repeating element (R1) that is responsible for binding. Here, we show that the cilium adhesin is proteolytically processed on the surface. Proteomic anal. of strain J proteins identified cleavage products of 22, 28, 66, and 94 kDa. N-terminal sequencing showed that the 66- and 94-kDa proteins possessed identical N termini and that the 66-kDa variant was generated by cleavage of the 28-kDa product from the C terminus. The 22-kDa product represented the N-terminal 195 amino acids of the cilium adhesin preprotein, confirming that the hydrophobic leader signal sequence is not cleaved during translocation across the membrane. Comparative studies of M. hyopneumoniae strain 232 showed that the major cleavage products of the cilium adhesin are similar, although P22 and P28 appear to be processed further in strain 232. Immunoblotting studies using antisera raised against peptide sequences within P22 and P66/P94 indicate that processing is complex, with cleavage occurring at different frequencies within multiple sites, and is strain specific. Immunogold electron microscopy showed that

fragments containing the cilium-binding site remained associated with the cell surface whereas cleavage products not containing the R1 element were located elsewhere. Not all secreted proteins undergo multiple cleavage, however, as evidenced by the anal. of the P102 gene product. The ability of M. hyopneumoniae to selectively cleave its secreted proteins provides this pathogen with a remarkable capacity to alter its surface architecture.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 5 OF 12 USPATFULL on STN
ACCESSION NUMBER: 2003:232060 USPATFULL
TITLE: Vaccine adjuvant
INVENTOR(S): **Minion, F. Chris**, Ames, IA, UNITED STATES
Menon, Sreekumar A., Philadelphia, PA, UNITED STATES
Mahairas, Gregory G., Seattle, WA, UNITED STATES
PATENT ASSIGNEE(S): Iowa State University Research Foundation, Inc., an Iowa corporation (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003162260	A1	20030828
APPLICATION INFO.:	US 2003-384948	A1	20030310 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 2000-692064, filed on 19 Oct 2000, GRANTED, Pat. No. US 6537552

	NUMBER	DATE
PRIORITY INFORMATION:	US 1999-160249P	19991019 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: FISH & RICHARDSON P.C., 3300 DAIN RAUSCHER PLAZA, 60 SOUTH SIXTH STREET, MINNEAPOLIS, MN, 55402
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Page(s)
LINE COUNT: 1632
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention features fusion agents such as fusion proteins that are useful for the treatment of and prevention from diseases that are susceptible to the effects of cellular (Th1 type) immune responses. Also encompassed by the invention are nucleic acids encoding the fusion proteins of the invention, vectors containing the nucleic acids, and cells containing the vectors. The invention includes methods of making and using the fusion agents of the invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L58 ANSWER 6 OF 12 USPATFULL on STN
ACCESSION NUMBER: 2003:81455 USPATFULL
TITLE: Vaccine adjuvant
INVENTOR(S): **Minion, F. Chris**, Ames, IA, United States
Menon, Sreekumar A., Philadelphia, PA, United States
Mahairas, Gregory G., Seattle, WA, United States
PATENT ASSIGNEE(S): Iowa State University Research Foundation, Ames,

IA, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6537552	B1	20030325	
APPLICATION INFO.:	US 2000-692064		20001019	(9)

	NUMBER	DATE	
PRIORITY INFORMATION:	US 1999-160429P	19991019	(60)

DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Smith, Lynette R. F.
ASSISTANT EXAMINER: Shahnan-Shah, Khatol S
LEGAL REPRESENTATIVE: Fish & Richardson P.C.
NUMBER OF CLAIMS: 8
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 10 Drawing Figure(s); 7 Drawing Page(s)
LINE COUNT: 1611
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention features fusion agents such as fusion proteins that are useful for the treatment of and prevention from diseases that are susceptible to the effects of cellular (Th1 type) immune responses. Also encompassed by the invention are nucleic acids encoding the fusion proteins of the invention, vectors containing the nucleic acids, and cells containing the vectors. The invention includes methods of making and using the fusion agents of the invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L58 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2003:858058 CAPLUS
DOCUMENT NUMBER: 140:106124
TITLE: The pyruvate dehydrogenase complex of Mycoplasma hyopneumoniae contains a novel lipoyl domain arrangement
AUTHOR(S): Matic, Jake N.; Wilton, Jody L.; Towers, Rebecca J.; Scarman, Anthony L.; **Minion, F. Chris** ; Walker, Mark J.; **Djordjevic, Steve P.**
CORPORATE SOURCE: Microbiology and Immunology Section, Elizabeth Macarthur Agricultural Institute, Camden, NSW, Australia
SOURCE: Gene (2003), 319, 99-106
CODEN: GENED6; ISSN: 0378-1119
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The genes encoding the pyruvate dehydrogenase (PDH) complex (pdhA, pdhB, pdhC and pdhD) from Mycoplasma hyopneumoniae have been cloned and sequenced. The genes are arranged into two operons, designated pdhAB and pdhCD, which are not found together in the chromosome. The pdhA, pdhB, pdhC and pdhD genes encode proteins of predicted mol. masses of 44.2 kDa (pyruvate dehydrogenase major subunit; E1α), 36.6 kDa (pyruvate dehydrogenase minor subunit; E1β), 33.1 kDa (dihydrolipoyl acetyltransferase; E2) and 66.3 kDa (dihydrolipoyl dehydrogenase; E3), resp. Sequence anal. of the pdhCD operon revealed the presence of a lipoyl-binding domain in pdhD but not in pdhC. The lipoyl domain is believed to act as a "swinging arm" that spans the

gaps between the catalytic domains of each of the subunits. Portions of the N-terminal regions of pdhA and pdhD were expressed as 6+His-tag fusion proteins in Escherichia coli and purified by nickel affinity chromatog. The purified proteins were used to raise antibodies in rabbits, and Western blot anal. was performed with the polyclonal rabbit antiserum. Both the pdhA and pdhD genes were expressed among various strains of M. hyopneumoniae as well as the porcine mycoplasmas, Mycoplasma hyorhinis and Mycoplasma flocculare. Southern hybridization anal. using probes from pdhA and pdhD detected one copy of each gene in the chromosome of M. hyopneumoniae. Since previous studies have shown pyruvate dehydrogenase activity in M. hyopneumoniae, it appears likely that a functional lipoyl-binding domain in the N terminus of PdhC is not an absolute prerequisite for pyruvate dehydrogenase enzyme activity. We hypothesize that the lipoyl-binding domain of PdhD is performing the enzymic function normally attributed to the PdhC lipoyl-binding domain in other organisms. Searches of pyruvate dehydrogenase gene sequences derived from other Mycoplasma species showed that a putative lipoyl domain was absent in the pdhC gene from Mycoplasma pulmonis. However, like other bacterial species, pdhC gene sequences from Mycoplasma capricolum, Mycoplasma genitalium and Mycoplasma pneumoniae contain a putative lipoyl domain.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5

ACCESSION NUMBER: 2001:93431 CAPLUS
DOCUMENT NUMBER: 135:255714
TITLE: Oral immunization of **swine** with attenuated Salmonella typhimurium aroA SL3261 expressing a recombinant antigen of **Mycoplasma hyopneumoniae** (NrdF) primes the immune system for a NrdF specific secretory IgA response in the lungs
AUTHOR(S): Fagan, Peter K.; Walker, Mark J.; Chin, James; Eamens, Graeme J.; **Djordjevic, Steve P.**
CORPORATE SOURCE: Department of Biological Sciences, University of Wollongong, Australia
SOURCE: Microbial Pathogenesis (2001), 30(2), 101-110
CODEN: MIPAEV; ISSN: 0882-4010
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Salmonella typhimurium SL3261 (aroA **mutant**) expressing a recombinant **Mycoplasma hyopneumoniae** antigen was used to orally immunize **swine** against **porcine** enzootic pneumonia. This construct, designated S. typhimurium aroA SL3261 (pKF1), expressed a recombinant protein containing the carboxy-terminal 11 kDa of a 42 kDa **M. hyopneumoniae** NrdF ribonucleotide reductase R2 subunit protein. Here we demonstrate that this antigen is present in all seven geog. diverse strains of **M. hyopneumoniae** tested, and is recognized by the **swine** immune system after exptl. infection with the virulent **M. hyopneumoniae** Beaufort strain. The immune response of **swine** orally immunized twice with S. typhimurium SL3261 (pKF1) on day 0 and day 14 was evaluated. Oral immunization with S. typhimurium SL3261 (pKF1) primed the immune system to elicit a significant secretory IgA response against the 15 kDa NrdF antigen in

the respiratory tract of **swine**, post-challenge, compared to control groups. Blood lymphocytes from **swine** immunized with S. typhimurium SL3261 (pKF1) proliferated significantly following stimulation with **M. hyopneumoniae** whole-cell exts. compared to control groups 14 days post-vaccination. Following challenge with virulent **M. hyopneumoniae**, **swine** immunized with S. typhimurium SL3261 (pKF1) showed higher average daily weight gains and reduced lung pathol. compared to control groups. (c) 2001 Academic Press.

REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 9 OF 12 USPATFULL on STN
ACCESSION NUMBER: 2000:170661 USPATFULL
TITLE: Recombinant **mycoplasma hyopneumoniae** vaccine
INVENTOR(S): **Minion, F. Chris**, Ames, IA, United States
Hsu, Tsungda, Bronx, NY, United States
PATENT ASSIGNEE(S): Iowa State University Research Foundation, Inc., Ames, IA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6162435		20001219
APPLICATION INFO.:	US 1998-198484		19981124 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-66565P	19971126 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Housel, James O.
ASSISTANT EXAMINER: Hines, Ja-Na A.
LEGAL REPRESENTATIVE: Dickstein Shapiro Morin & Oshinsky, LLP
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 8 Drawing Figure(s); 8 Drawing Page(s)
LINE COUNT: 1326
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A **Mycoplasma hyopneumoniae** protein prepared by recombinant DNA or synthetic means, DNA sequences coding for the protein, an expression vector and transformed host containing the DNA sequences, a vaccine based on the protein, a vaccine based on the DNA sequences, methods of treating **swine** to prevent enzootic pneumonia using the vaccines, and diagnostic tests based on the protein or antibodies raised against it for detecting the presence of Mhyo infection in **swine** herds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L58 ANSWER 10 OF 12 USPATFULL on STN
ACCESSION NUMBER: 1998:9321 USPATFULL
TITLE: PCR-based assay for **Mycoplasma hyopneumoniae**
INVENTOR(S): Artiushin, Sergey, Ames, IA, United States
Stipkovits, Laszlo, Budapest, Hungary
Minion, F. Chris, Ames, IA, United States
PATENT ASSIGNEE(S): Iowa State University Research Foundation, Inc.,

Ames, IA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5712090		19980127
APPLICATION INFO.:	US 1993-62632		19930518 (8)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Arthur, Lisa B.
LEGAL REPRESENTATIVE: Dickstein, Shapiro, Morin & Oshinsky, LLP
NUMBER OF CLAIMS: 14
EXEMPLARY CLAIM: 1,6
NUMBER OF DRAWINGS: 4 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 820
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed herein is a PCR-based assay for **Mycoplasma hyopneumoniae**, a species-specific primer pair for use in the assay, and a related diagnostic kit. The primer pair is made up of an oligonucleotide having the nucleotide sequence 5'-AAGTTCATTCGCGCTAGCCC-3' and an oligonucleotide having the nucleotide sequence 5'-GCTCCTACTCCATATTGCCC-3'. Preferably, the kit contains an oligonucleotide probe having the sequence 5'-GGTAGCCCTTCCTTTGAGGT-3'.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L58 ANSWER 11 OF 12 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

ACCESSION NUMBER: 1997:296325 BIOSIS
DOCUMENT NUMBER: PREV199799595528
TITLE: Oral immunization of mice with attenuated Salmonella typhimurium aroA expressing a recombinant **Mycoplasma hyopneumoniae** antigen (NrdF).
AUTHOR(S): Fagan, Peter K.; **Djordjevic, Steve P.**; Chin, James; Eamens, Graeme J.; Walker, Mark J. [Reprint author]
CORPORATE SOURCE: Dep. Biol. Sci., Univ. Wollongong, Wollongong, Camden, New South Wales, Australia
SOURCE: Infection and Immunity, (1997) Vol. 65, No. 6, pp. 2502-2507.
CODEN: INFIBR. ISSN: 0019-9567.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 9 Jul 1997
Last Updated on STN: 5 Aug 1997

AB **Mycoplasma hyopneumoniae** is the etiological agent of **porcine** enzootic pneumonia, a commercially expensive respiratory disease of **swine**. Salmonella typhimurium SL3261 was used as a live carrier of plasmid pKF1, which encodes a 15-kDa recombinant **M. hyopneumoniae** protein. This expressed recombinant protein consists of the carboxy-terminal 11 kDa of a 42-kDa **M. hyopneumoniae** NrdF ribonucleotide reductase R2 subunit protein. Rabbit anti-15-kDa serum was able to inhibit the growth of viable **M. hyopneumoniae** J in vitro. When used as a live oral vaccine, S. typhimurium SL3261(pKF1) induced a significant secretory immunoglobulin A immune response in the lungs of mice orally immunized against the **M. hyopneumoniae** antigen. Utilization of live oral vaccines

expressing potentially protective **M. hyopneumoniae** proteins, such as the NrdF antigen, which can stimulate a lung mucosal response against surface-accessible proteins may provide a cost-effective alternative to the present control strategies used for **porcine** enzootic pneumonia.

L58 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 1997:117930 CAPLUS
DOCUMENT NUMBER: 126:182057
TITLE: Cloning and functional analysis of the P97 **swine** cilium adhesin gene of **Mycoplasma hyopneumoniae**
AUTHOR(S): Hsu, Tsungda; Artiushin, Sergey; **Minion, F. Chris**
CORPORATE SOURCE: Veterinary Medical Research Institute, Iowa State University, Ames, IA, 50011, USA
SOURCE: Journal of Bacteriology (1997), 179(4), 1317-1323
CODEN: JOBAAY; ISSN: 0021-9193
PUBLISHER: American Society for Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Colonization of the **swine** respiratory tract by **Mycoplasma hyopneumoniae** is accomplished by specific binding to the cilia of the mucosal epithelial cells. Previous studies have implicated a 97-kDa outer membrane-associated protein, P97, that appeared to mediate this interaction. To further define the role of P97 in adherence to **porcine** cilia, the structural gene was cloned and sequenced, and the recombinant products were analyzed. Monoclonal antibodies were used to identify recombinant clones in a genomic library expressed in an opal suppressor host because of alternate codon usage by mycoplasmas. The gene coding for P97 was then identified by Tn1000 **mutagenesis** of a recombinant clones. DNA sequence anal. revealed an open reading frame coding for a 124.9-kDa protein with a hydrophobic transmembrane spanning domain. The N-terminal sequence of purified P97 mapped at amino acid position 195 of the translated sequence, indicating that a processing event had occurred in **M. hyopneumoniae**. Both recombinant P97 protein expressed in an Escherichia coli opal suppressor host and **M. hyopneumoniae** bound specifically two **swine** cilia, and the binding was inhibited by heparin and fucoidan, thus supporting the hypothesis that P97 was actively involved in binding to **swine** cilia in vivo.
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

FILE 'HOME' ENTERED AT 12:37:15 ON 22 NOV 2005

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     FILE 'HOME' ENTERED AT 11:43:02 ON 22 NOV 2005
                D COST

     FILE 'HCAPLUS' ENTERED AT 12:18:12 ON 22 NOV 2005
L18  .         34 SEA ABB=ON  PLU=ON  (MYCOPLASM? OR M)(W)HYOPNEUMON? AND
                  (MUTAT? OR MUTANT? OR MUTAGEN? OR POLYMORPH? OR POLY
                  MORPH?)
L19             5 SEA ABB=ON  PLU=ON  L18 AND IMMUNOGEN?
L20            20 SEA ABB=ON  PLU=ON  L18 AND (SWINE OR PORCINE OR PIG OR
                  HOG OR PIGLET)
                  D KWIC
L*** DEL        3 S MINION ?/AU AND L20
                  D TI AU 1-3
L*** DEL        1 S L21 AND VECTOR
                  D TI AU
                  D KWIC
L21             8 SEA ABB=ON  PLU=ON  L20 AND VECTOR
L22             2 SEA ABB=ON  PLU=ON  L18 AND ADMIN?
                  D QUE L19
                  D QUE L21
                  D QUE L22
L23            13 SEA ABB=ON  PLU=ON  L19 OR L21 OR L22
                  D 1-13 .BEVERLY

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,
     JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB' ENTERED AT 12:22:22
     ON 22 NOV 2005
L24           120 SEA ABB=ON  PLU=ON  L18
L25            17 SEA ABB=ON  PLU=ON  L24 AND IMMUNOGEN?
L26  .         84 SEA ABB=ON  PLU=ON  L24 AND (PORCINE OR PIG OR PIGLET OR
                  SWINE OR HOG)
L27            10 SEA ABB=ON  PLU=ON  L26 AND VECTOR
L28             7 SEA ABB=ON  PLU=ON  L24 AND ADMIN?
L29            28 SEA ABB=ON  PLU=ON  L25 OR L27 OR L28
L30            12 DUP REM L29 (16 DUPLICATES REMOVED)
                  D 1-12 IBIB ABS

     FILE 'MEDLINE' ENTERED AT 12:24:05 ON 22 NOV 2005
                E MYCOPLASMA HYOPNEUMONIAE/CT 5
L31            43 SEA ABB=ON  PLU=ON  "MYCOPLASMA HYOPNEUMONIAE"/CT
                  E MUTANTS/CT 5
                  E MUTANT/CT 5
                  E MUTAGENESIS/CT 5
L32         18814 SEA ABB=ON  PLU=ON  MUTAGENESIS/CT
                  E POLYMORPHISM/CT
L33         54271 SEA ABB=ON  PLU=ON  "POLYMORPHISM, GENETIC"/CT
L34             0 SEA ABB=ON  PLU=ON  L31 AND (L32 OR L33)
                  E SWINE/CT 5
L35        124920 SEA ABB=ON  PLU=ON  SWINE/CT
L36            39 SEA ABB=ON  PLU=ON  L31 AND L35
L37             4 SEA ABB=ON  PLU=ON  L36 AND ADMINISTRATION & DOSAGE/CT
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Searcher : Shears 571-272-2528

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                E IMMUNOGENICITY/CT 5
                E VECTORS/CT 5
                E VECTOR/CT 5
                D QUE L34
                D QUE L37
                D L37 1-4 .BEVERLYMED

     FILE 'USPATFULL' ENTERED AT 12:27:17 ON 22 NOV 2005
L38          133 SEA ABB=ON  PLU=ON  ((MYCOPLASM? OR M)(W)HYOPNEUMON?)(L)(MU
                 TAT? OR MUTANT? OR MUTAGEN? OR POLYMORPH? OR POLY MORPH?)
L39           82 SEA ABB=ON  PLU=ON  L38(L)IMMUNOGEN?
L40           75 SEA ABB=ON  PLU=ON  L39(L)(PORCINE OR PIG OR PIGLET OR
                 SWINE OR HOG)
L41           67 SEA ABB=ON  PLU=ON  L40(L)VECTOR
L42           63 SEA ABB=ON  PLU=ON  L41(L)ADMIN?
L43           60 SEA ABB=ON  PLU=ON  L42(L)(PURE OR PURIF?)
L44           59 SEA ABB=ON  PLU=ON  L43(L)(IMMUNORESPONS? OR IMMUN?(3A)RESP
                 ONS?)
L45           24 SEA ABB=ON  PLU=ON  ((MYCOPLASM? OR M)(W)HYOPNEUMON?)(S)(MU
                 TAT? OR MUTANT? OR MUTAGEN? OR POLYMORPH? OR POLY MORPH?)
L46            3 SEA ABB=ON  PLU=ON  L45(S)IMMUNOGEN?
L47            7 SEA ABB=ON  PLU=ON  L45(S)(PORCINE OR HOG OR PIG OR PIGLET
                 OR SWINE)
L48            3 SEA ABB=ON  PLU=ON  L45(S)VECTOR
L49            2 SEA ABB=ON  PLU=ON  L45(S)ADMIN?
L50           10 SEA ABB=ON  PLU=ON  L46 OR L47 OR L48 OR L49
                 D 1-10 IBIB ABS

     FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,
     JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB, USPATFULL' ENTERED AT
     12:32:14 ON 22 NOV 2005
L51          412 SEA ABB=ON  PLU=ON  ("MINION F"? OR "MINION C"?)/AU
L52          760 SEA ABB=ON  PLU=ON  "DJORDJEVIC S"?/AU
L53           14 SEA ABB=ON  PLU=ON  L51 AND L52
L54         1158 SEA ABB=ON  PLU=ON  L51 OR L52
L*** DEL      60 S L54 AND 18
L*** DEL      25 S L55 AND (SWINE OR PIG OR PIGLET OR HOG OR PORCINE)
L*** DEL      38 S L53 OR L56
L*** DEL      14 DUP REM L57 (24 DUPLICATES REMOVED)
                 D 1-14 IBIB ABS

     FILE 'HOME' ENTERED AT 12:35:01 ON 22 NOV 2005

     FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,
     JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB, USPATFULL' ENTERED AT
     12:36:01 ON 22 NOV 2005
L55           32 SEA ABB=ON  PLU=ON  L54 AND L18
L56           24 SEA ABB=ON  PLU=ON  L55 AND (SWINE OR PIG OR PIGLET OR HOG
                 OR PORCINE)
L57           35 SEA ABB=ON  PLU=ON  L53 OR L56
L58           12 DUP REM L57 (23 DUPLICATES REMOVED)
                 D 1-12 IBIB ABS

     FILE 'HOME' ENTERED AT 12:37:15 ON 22 NOV 2005


     FILE HOME

     FILE REGISTRY
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 21 NOV 2005 HIGHEST RN 868586-21-4
DICTIONARY FILE UPDATES: 21 NOV 2005 HIGHEST RN 868586-21-4

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TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

****
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
****

Structure search iteration limits have been increased. See HELP SLIMI for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

FILE HCAPLUS

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FILE COVERS 1907 - 22 Nov 2005 VOL 143 ISS 22
FILE LAST UPDATED: 21 Nov 2005 (20051121/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE MEDLINE
FILE LAST UPDATED: 16 NOV 2005 (20051116/UP). FILE COVERS 1950 TO DA

On December 19, 2004, the 2005 MeSH terms were loaded.

The MEDLINE reload for 2005 is now available. For details enter HELP RLOAD at an arrow promt (=>). See also:

http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html

OLDMEDLINE now back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE BIOSIS
FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 16 November 2005 (20051116/ED)

FILE EMBASE
FILE COVERS 1974 TO 17 Nov 2005 (20051117/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE WPIDS
FILE LAST UPDATED: 17 NOV 2005 <20051117/UP>
MOST RECENT DERWENT UPDATE: 200574 <200574/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE http://thomsonderwent.com/coverage/latestupdates/ <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER GUIDES, PLEASE VISIT:
http://thomsonderwent.com/support/userguides/ <<<

>>> NEW! FAST-ALERTING ACCESS TO NEWLY-PUBLISHED PATENT DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX FIRST VIEW - FILE WPIFV.
FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501. PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code FOR DETAILS. <<<

>>> PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html <

FILE CONFSCI
FILE COVERS 1973 TO 25 May 2005 (20050525/ED)

Searcher : Shears 571-272-2528

FILE JICST-EPLUS
FILE COVERS 1985 TO 21 NOV 2005 (20051121/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED TERM (/CT) THESAURUS RELOAD.

FILE JAPIO
FILE LAST UPDATED: 4 NOV 2005 <20051104/UP>
FILE COVERS APR 1973 TO JULY 28, 2005

<<< GRAPHIC IMAGES AVAILABLE >>>

>>> PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html <

FILE PHIC
FILE COVERS CURRENT RECORDS AND IS UPDATED DAILY
FILE LAST UPDATED: 21 NOV 2005 (20051121/ED)

FILE PHIN
FILE COVERS 1980 TO 18 NOV 2005 (20051118/ED)

FILE TOXCENTER

FILE COVERS 1907 TO 22 Nov 2005 (20051122/ED)

This file contains CAS Registry Numbers for easy and accurate substanc identification.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TOXCENTER has been enhanced with new files segments and search fields. See HELP CONTENT for more information.

TOXCENTER thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2005 vocabulary. See http://www.nlm.nih.gov/mesh/ and http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html for a description of changes.

FILE CANCERLIT
FILE COVERS 1963 TO 15 Nov 2002 (20021115/ED)

On July 28, 2002, CANCERLIT was reloaded. See HELP RLOAD for details

CANCERLIT thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2002 vocabulary. Enter HELP THESAURUS for details.

This file contains CAS Registry Numbers for easy and accurate substan identification.

FILE VETU
FILE LAST UPDATED: 02 JAN 2002 <20020102/UP>
FILE COVERS 1983-2001

FILE VETB
FILE LAST UPDATED: 25 SEP 94 <940925/UP>

FILE COVERS 1968-1982

FILE CABA
FILE COVERS 1973 TO 3 Nov 2005 (20051103/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

The CABA file was reloaded 7 December 2003. Enter HELP RLOAD for deta

FILE AGRICOLA

FILE COVERS 1970 TO 4 Nov 2005 (20051104/ED)

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FILE PASCAL
FILE LAST UPDATED: 21 NOV 2005 <20051121/UP>
FILE COVERS 1977 TO DATE.

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FILE DISSABS
FILE COVERS 1861 TO 26 OCT 2005 (20051026/ED)

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FILE FEDRIP

FILE COVERS CURRENT DATA. LAST UPDATE: 8 NOV 2005 (20051108/ED)

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FILE SCISEARCH

FILE COVERS 1974 TO 17 Nov 2005 (20051117/ED)

SCISEARCH has been reloaded, see HELP RLOAD for details.

FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 22 Nov 2005 (20051122/PD)
FILE LAST UPDATED: 22 Nov 2005 (20051122/ED)
HIGHEST GRANTED PATENT NUMBER: US6968571
HIGHEST APPLICATION PUBLICATION NUMBER: US2005257307

CA INDEXING IS CURRENT THROUGH 22 Nov 2005 (20051122/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 22 Nov 2005 (20051122/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2005

>>> USPAT2 is now available. USPATFULL contains full text of the
>>> original, i.e., the earliest published granted patents or
>>> applications. USPAT2 contains full text of the latest US
>>> publications, starting in 2001, for the inventions covered in
>>> USPATFULL. A USPATFULL record contains not only the original
>>> published document but also a list of any subsequent
>>> publications. The publication number, patent kind code, and
>>> publication date for all the US publications for an invention
>>> are displayed in the PI (Patent Information) field of USPATFULL
>>> records and may be searched in standard search fields, e.g., /PN,
>>> /PK, etc.

>>> USPATFULL and USPAT2 can be accessed and searched together
>>> through the new cluster USPATALL. Type FILE USPATALL to
>>> enter this cluster.
>>>
>>> Use USPATALL when searching terms such as patent assignees,
>>> classifications, or claims, that may potentially change from
>>> the earliest to the latest publication.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

FILE CAPLUS

FILE COVERS 1907 - 22 Nov 2005 VOL 143 ISS 22
FILE LAST UPDATED: 21 Nov 2005 (20051121/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply
They are available for your review at:

http://www.cas.org/infopolicy.html

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=> d his; d cost

     (FILE 'HOME' ENTERED AT 11:29:38 ON 22 NOV 2005)
               SET COST OFF

     FILE 'REGISTRY' ENTERED AT 11:29:44 ON 22 NOV 2005
               E AP 920/CN 5
L1             1 S E3
               E AP920/CN 5
               E "PORICNE PLASMA ALBUMIN"/CN 5
               E "PORICNE PLASMA"/CN 5
               E "SWINE PLASMA ALBUMIN"/CN 5
               E "SWINE PLASMA"/CN 5
               E "ALBUMIN, PORCINE"/CN 5
               E "ALBUMIN, SWINE"/CN 5

     FILE 'HCAPLUS' ENTERED AT 11:31:04 ON 22 NOV 2005
L2         11268 S (PORCINE OR SWINE OR PIG OR HOG)(S)(PLASMA OR BLOOD MEAL
L3            15 S L2 AND (CRUSTACEA? OR PRAWN OR LOBSTER OR CRAB OR SHRIMP
L4            15 S (L2 OR (SBM OR PBM)(S)BLOOD MEAL) AND (CRUSTACEA? OR PRAW

     FILE 'REGISTRY' ENTERED AT 11:34:38 ON 22 NOV 2005

     FILE 'HCAPLUS' ENTERED AT 11:34:38 ON 22 NOV 2005

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, JICST-EPLUS, JAPIO,
     PHIC, PHIN, TOXCENTER, CANCERLIT, VETU, VETB, CABA, AGRICOLA, PASCAL,
     DISSABS, FEDRIP' ENTERED AT 11:34:40 ON 22 NOV 2005
L5            40 S L4
L6            35 DUP REM L5 (5 DUPLICATES REMOVED)

     FILE 'MEDLINE' ENTERED AT 11:36:36 ON 22 NOV 2005
L7             8 S (CRUSTACEA AND (IMMUNITY OR ALBUMINS))/CT

     FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, JICST-EPLUS,
     JAPIO, PHIC, PHIN, TOXCENTER, CANCERLIT, VETU, VETB, CABA, AGRICOLA,
     PASCAL, DISSABS, FEDRIP' ENTERED AT 11:38:05 ON 22 NOV 2005
L8         24797 S ("HATTORI T"? OR "TSUNEO H"?)/AU
L9         65101 S ("TAKAHASHI Y"? OR "YUKINORI T"?)/AU
L10         1302 S ("TACHIKAWA Y"? OR "YOSHIHIRO T"?)/AU
L11            4 S L8 AND L9 AND L10
L12           77 S L8 AND (L9 OR L10)
L13            4 S L9 AND L10
L14           37 S (L12 OR L8 OR L9 OR L10) AND (L2 OR SBM OR PBM)
L15            5 S (L12 OR L8 OR L9 OR L10) AND L4
L16            5 S L11 OR L13 OR L15
L17            3 DUP REM L16 (2 DUPLICATES REMOVED)

     FILE 'HOME' ENTERED AT 11:43:02 ON 22 NOV 2005

     FILE 'HCAPLUS' ENTERED AT 12:18:12 ON 22 NOV 2005
L18           34 S (MYCOPLASM? OR M)(W)HYOPNEUMON? AND (MUTAT? OR MUTANT? OR
L19            5 S L18 AND IMMUNOGEN?
L20           20 S L18 AND (SWINE OR PORCINE OR PIG OR HOG OR PIGLET)
L21            8 S L20 AND VECTOR
L22            2 S L18 AND ADMIN?
L23           13 S L19 OR L21 OR L22

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,
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JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB' ENTERED AT 12:22:22 ON 22 NOV 2005

L24 120 S L18
L25 17 S L24 AND IMMUNOGEN?
L26 84 S L24 AND (PORCINE OR PIG OR PIGLET OR SWINE OR HOG)
L27 10 S L26 AND VECTOR
L28 7 S L24 AND ADMIN?
L29 28 S L25 OR L27 OR L28
L30 12 DUP REM L29 (16 DUPLICATES REMOVED)

FILE 'MEDLINE' ENTERED AT 12:24:05 ON 22 NOV 2005
E MYCOPLASMA HYOPNEUMONIAE/CT 5
L31 43 S E3
E MUTANTS/CT 5
E MUTANT/CT 5
E MUTAGENESIS/CT 5
L32 18814 S E3
E POLYMORPHISM/CT
L33 54271 S E5
L34 0 S L31 AND (L32 OR L33)
E SWINE/CT 5
L35 124920 S E3
L36 39 S L31 AND L35
L37 4 S L36 AND ADMINISTRATION & DOSAGE/CT
E IMMUNOGENICITY/CT 5
E VECTORS/CT 5
E VECTOR/CT 5

FILE 'USPATFULL' ENTERED AT 12:27:17 ON 22 NOV 2005
L38 133 S ((MYCOPLASM? OR M)(W)HYOPNEUMON?)(L)(MUTAT? OR MUTANT? OR
L39 82 S L38(L)IMMUNOGEN?
L40 75 S L39(L)(PORCINE OR PIG OR PIGLET OR SWINE OR HOG)
L41 67 S L40(L)VECTOR
L42 63 S L41(L)ADMIN?
L43 60 S L42(L)(PURE OR PURIF?)
L44 59 S L43(L)(IMMUNORESPONS? OR IMMUN?(3A)RESPONS?)
L45 24 S ((MYCOPLASM? OR M)(W)HYOPNEUMON?)(S)(MUTAT? OR MUTANT? OR
L46 3 S L45(S)IMMUNOGEN?
L47 7 S L45(S)(PORCINE OR HOG OR PIG OR PIGLET OR SWINE)
L48 3 S L45(S)VECTOR
L49 2 S L45(S)ADMIN?
L50 10 S L46 OR L47 OR L48 OR L49

FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB, USPATFULL' ENTERED AT 12:32:14 ON 22 NOV 2005
L51 412 S ("MINION F"? OR "MINION C"?)/AU
L52 760 S "DJORDJEVIC S"?/AU
L53 14 S L51 AND L52
L54 1158 S L51 OR L52

FILE 'HOME' ENTERED AT 12:35:01 ON 22 NOV 2005

FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO, CABA, AGRICOLA, VETU, VETB, USPATFULL' ENTERED AT 12:36:01 ON 22 NOV 2005
L55 32 S L54 AND L18
L56 24 S L55 AND (SWINE OR PIG OR PIGLET OR HOG OR PORCINE)
L57 35 S L53 OR L56

Searcher : Shears 571-272-2528